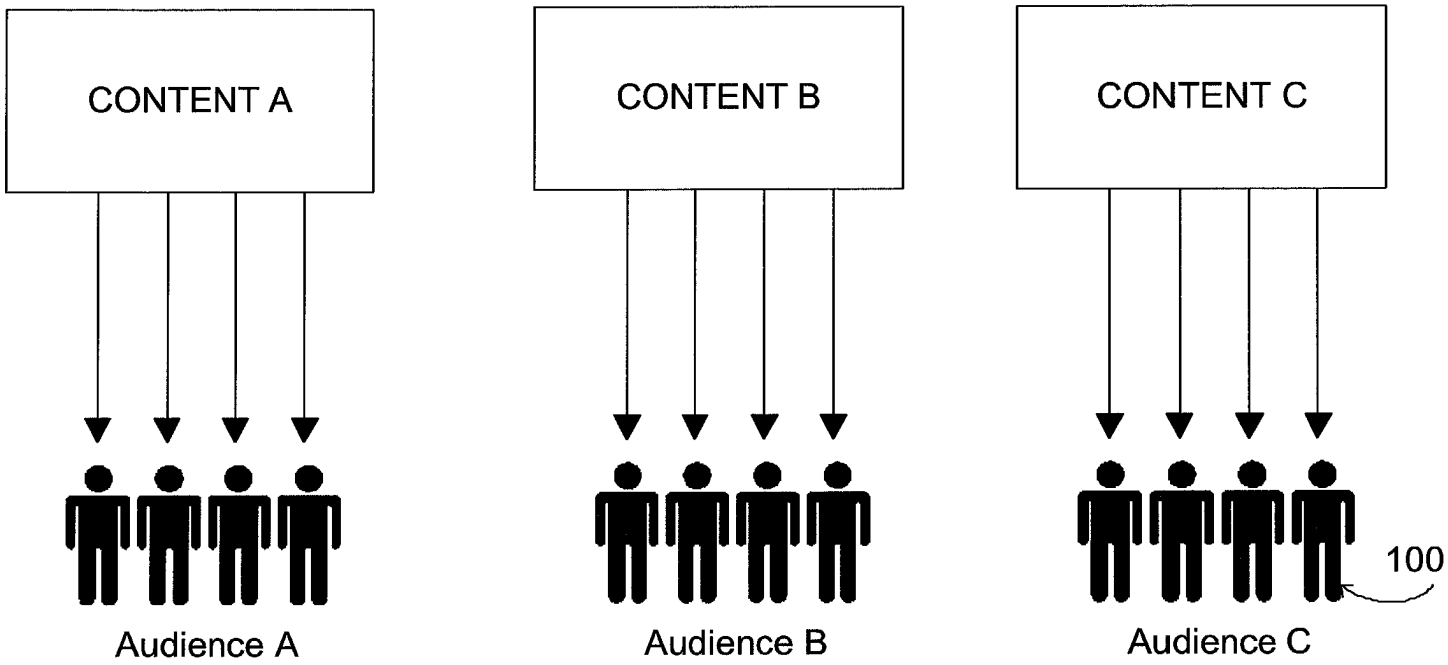
CONTENT A
CONTENT B
CONTENT C
100
Audience A
Audience B
Audience C

Figure 1

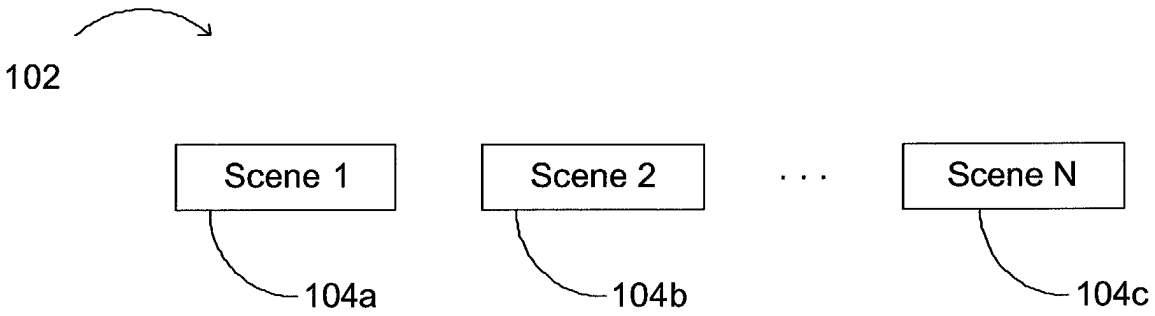

Figure 2

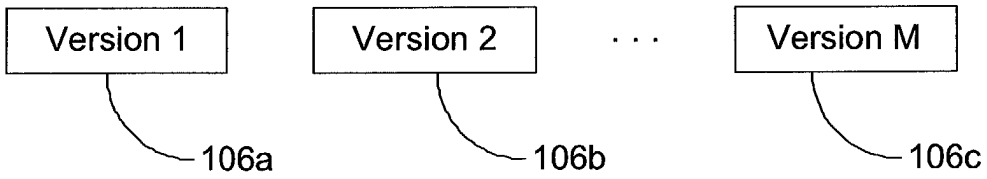

Figure 3

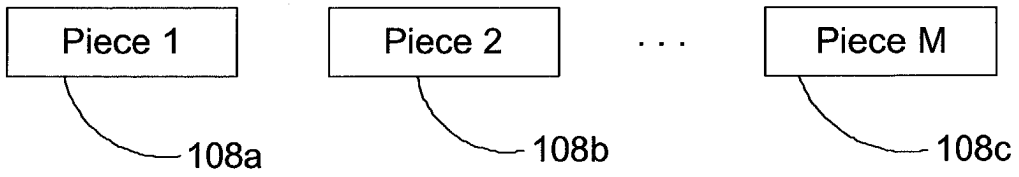

Figure 4

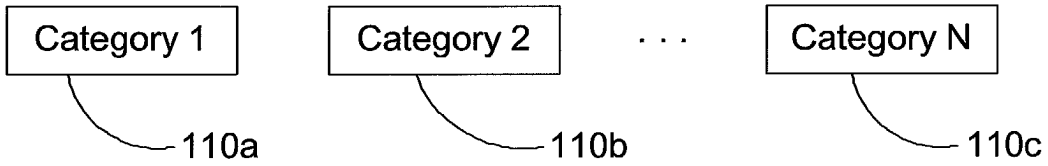

Figure 5

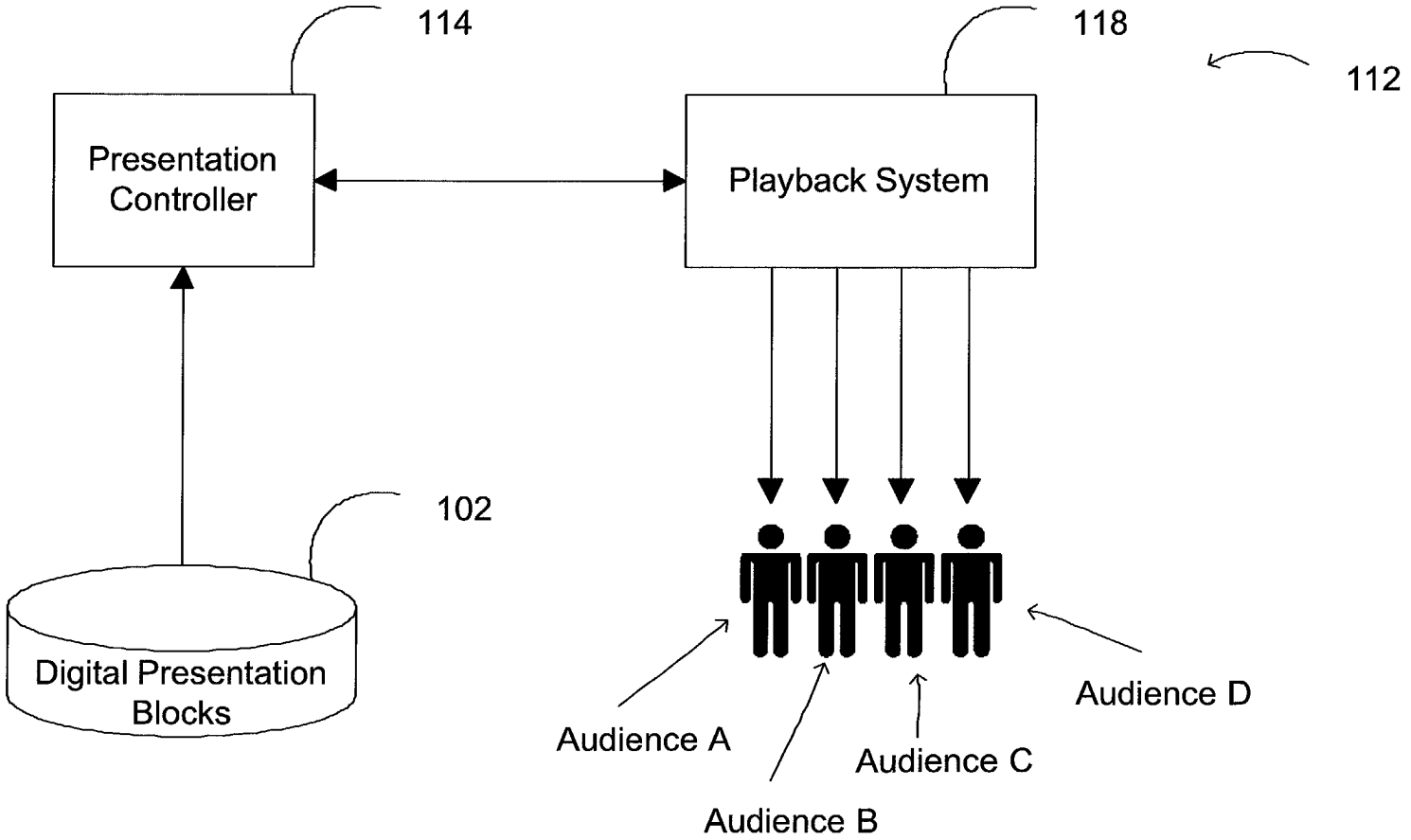
114
118
112
Presentation Controller
Playback System
102
Digital Presentation Blocks
Audience A
Audience B
Audience C
Audience D

Figure 6

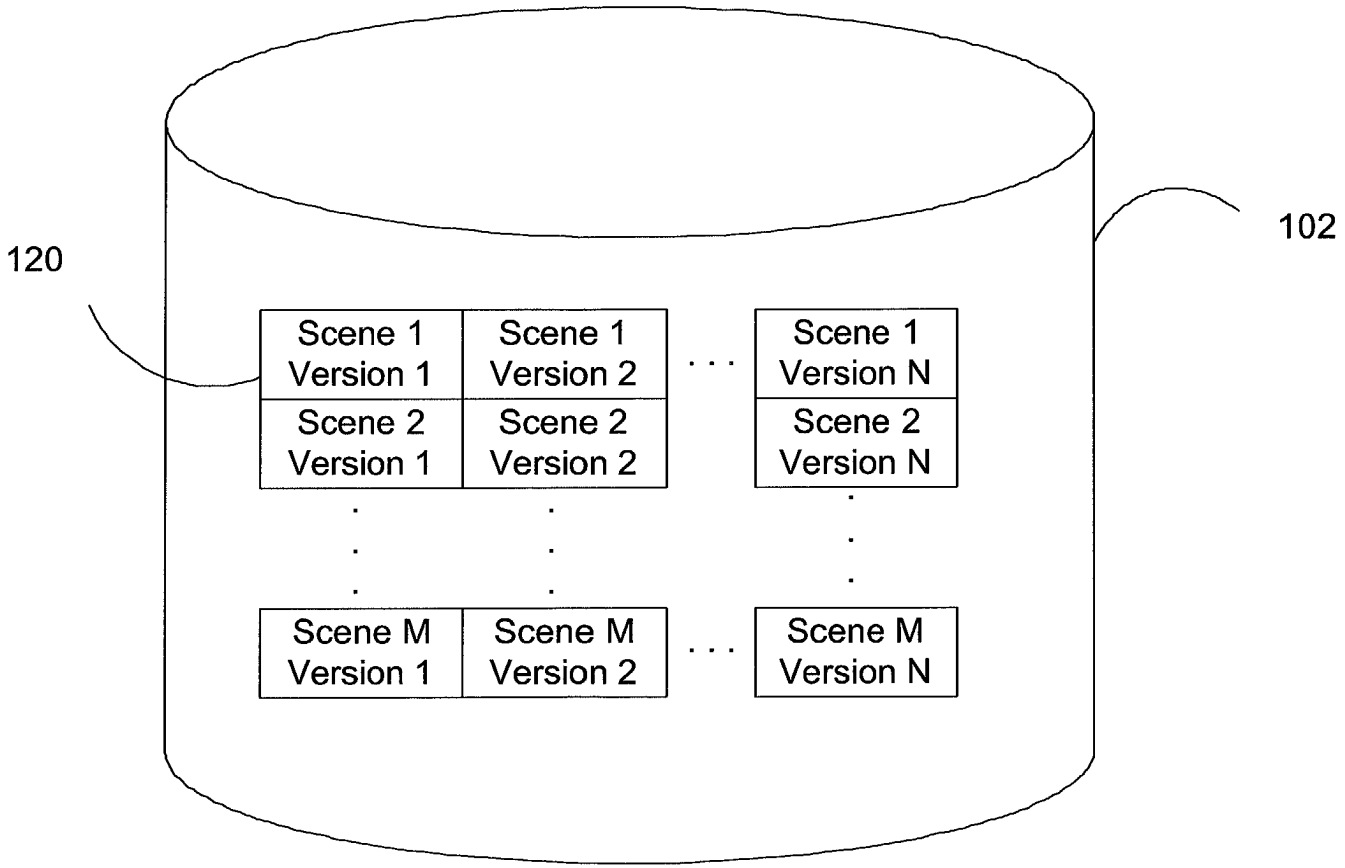
120
102
Scene 1 Version 1
Scene 1 Version 2
Scene 1 Version N
Scene 2 Version 1
Scene 2 Version 2
Scene 2 Version N
Scene M Version 1
Scene M Version 2
Scene M Version N

Figure 7

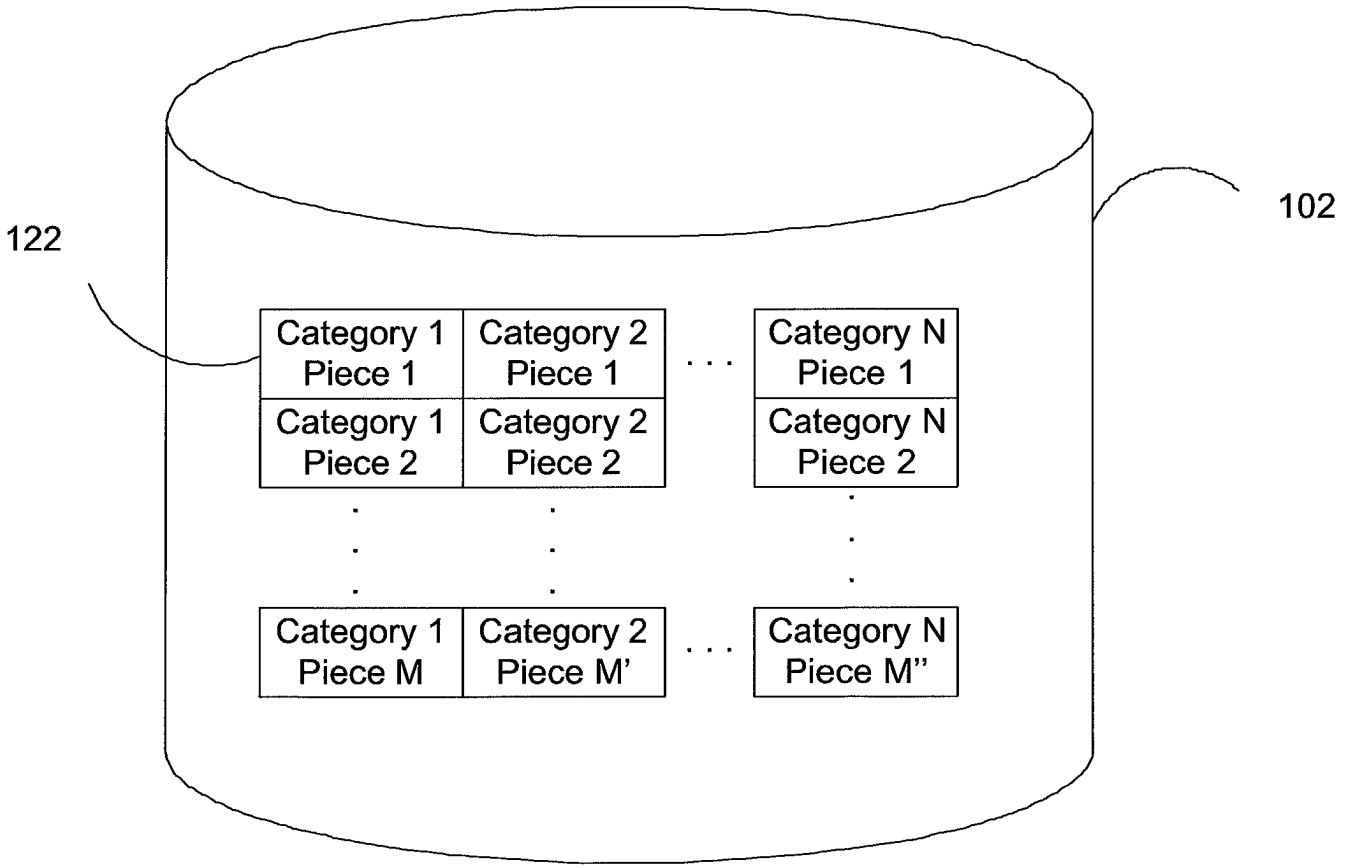
122
102
Category 1 Piece 1
Category 2 Piece 1
Category N Piece 1
Category 1 Piece 2
Category 2 Piece 2
Category N Piece 2
Category 1 Piece M
Category 2 Piece M'
Category N Piece M''

Figure 8

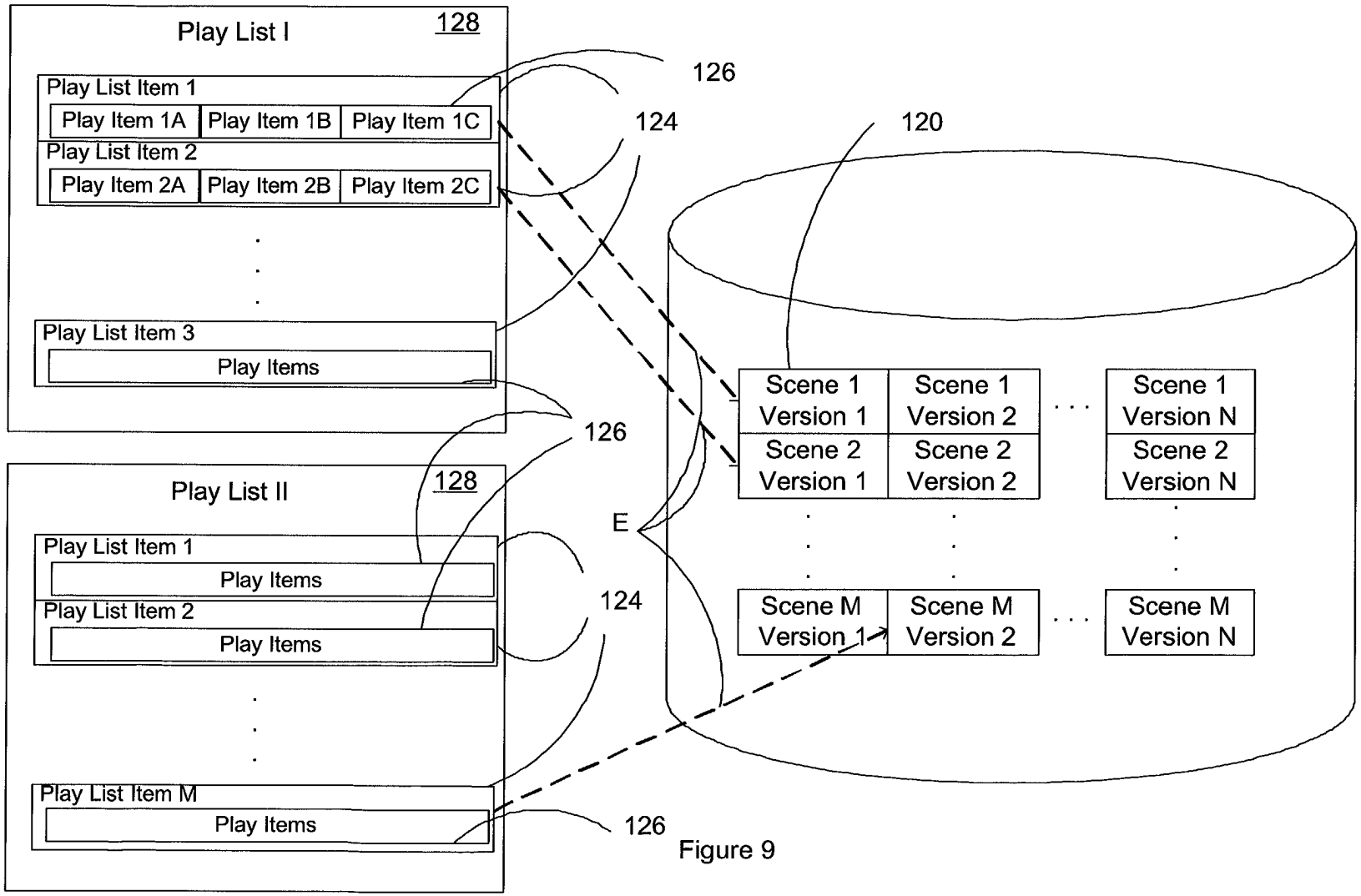
Play List I
128
Play List Item 1
Play Item 1A
Play Item 1B
Play Item 1C
Play List Item 2
Play Item 2A
Play Item 2B
Play Item 2C
Play List Item 3
Play Items
126
124
120
Play List II
128
Play List Item 1
Play Items
Play List Item 2
Play Items
Play List Item M
Play Items
126
E
124
Scene 1 Version 1
Scene 1 Version 2
Scene 1 Version N
Scene 2 Version 1
Scene 2 Version 2
Scene 2 Version N
Scene M Version 1
Scene M Version 2
Scene M Version N

Figure 9

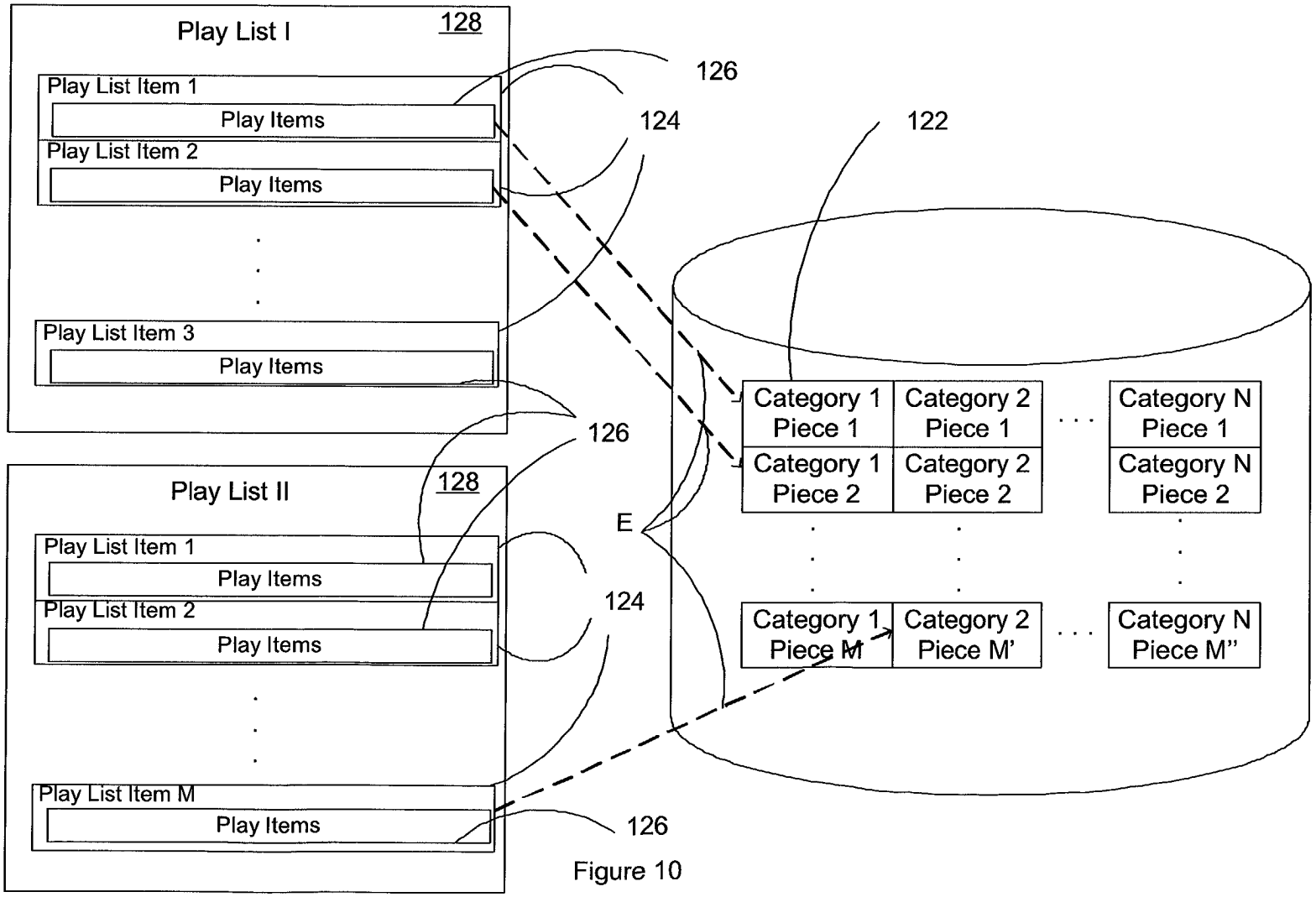
Play List I
128
Play List Item 1
Play Items
Play List Item 2
Play Items
Play List Item 3
Play Items
126
124
122
Play List II
128
Play List Item 1
Play Items
Play List Item 2
Play Items
Play List Item M
Play Items
126
124
126
E
Category 1 Piece 1
Category 2 Piece 1
Category N Piece 1
Category 1 Piece 2
Category 2 Piece 2
Category N Piece 2
Category 1 Piece M
Category 2 Piece M'
Category N Piece M"

Figure 10

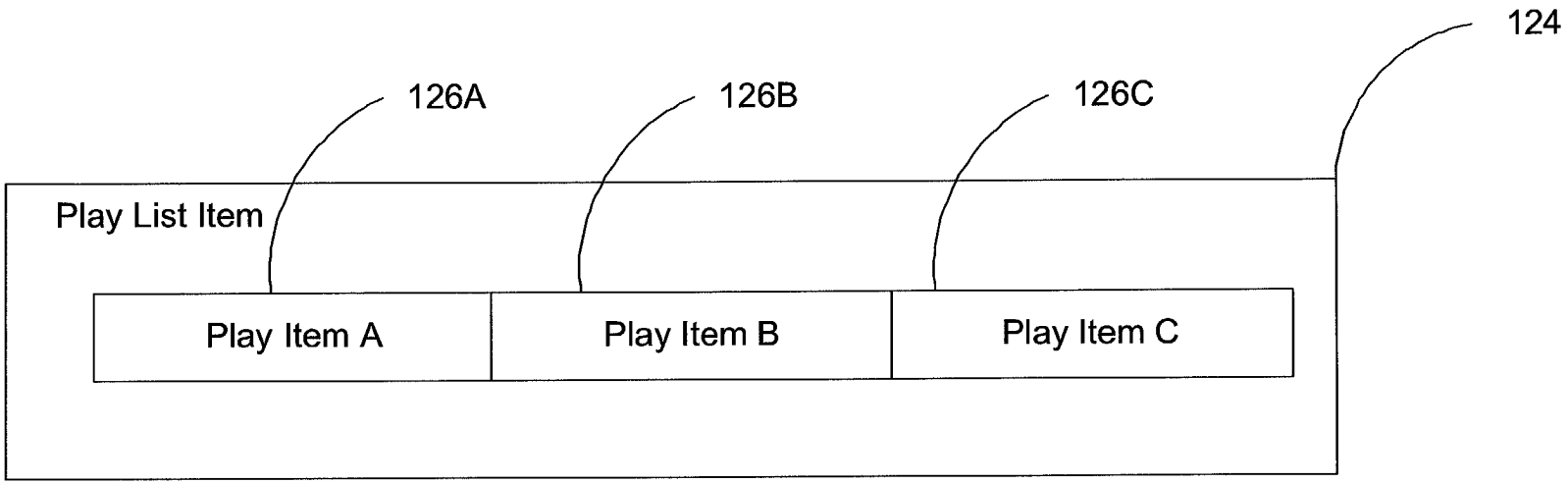
124
126A
126B
126C
Play List Item
Play Item A
Play Item B
Play Item C

Figure 11

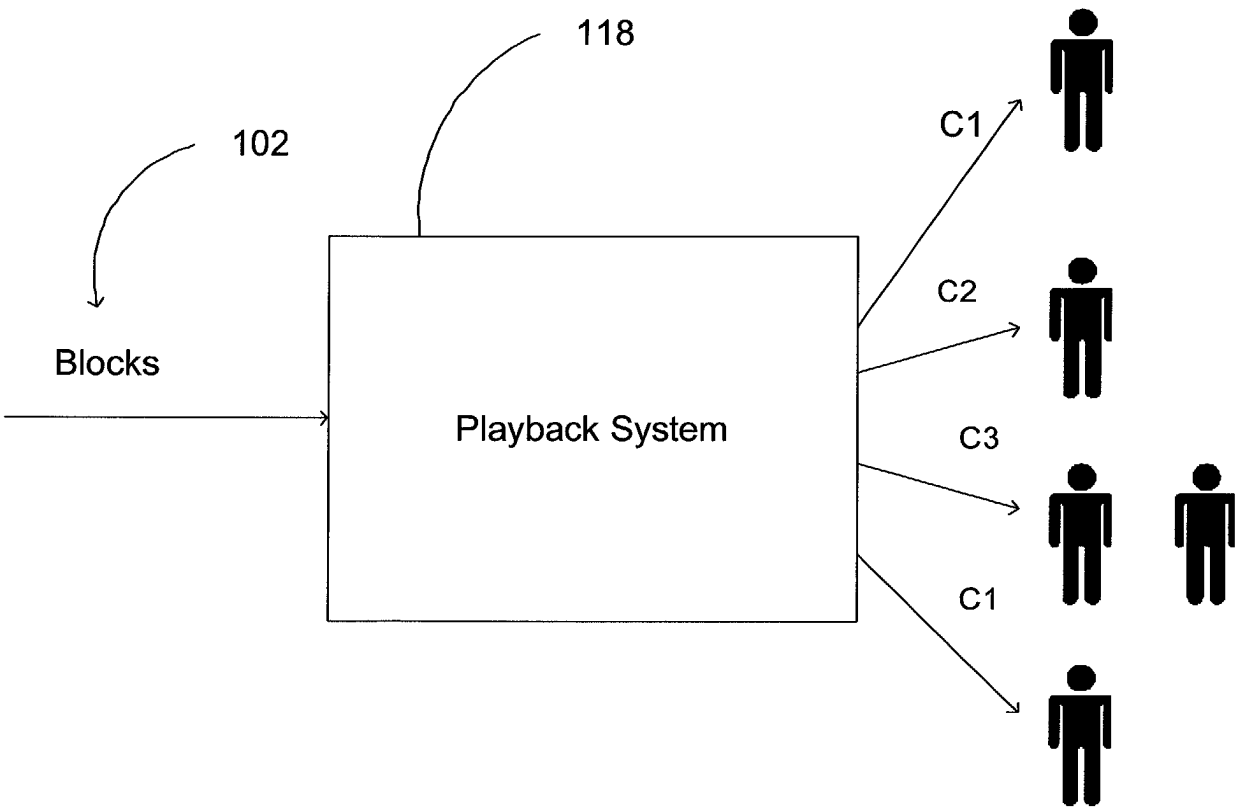

Figure 12

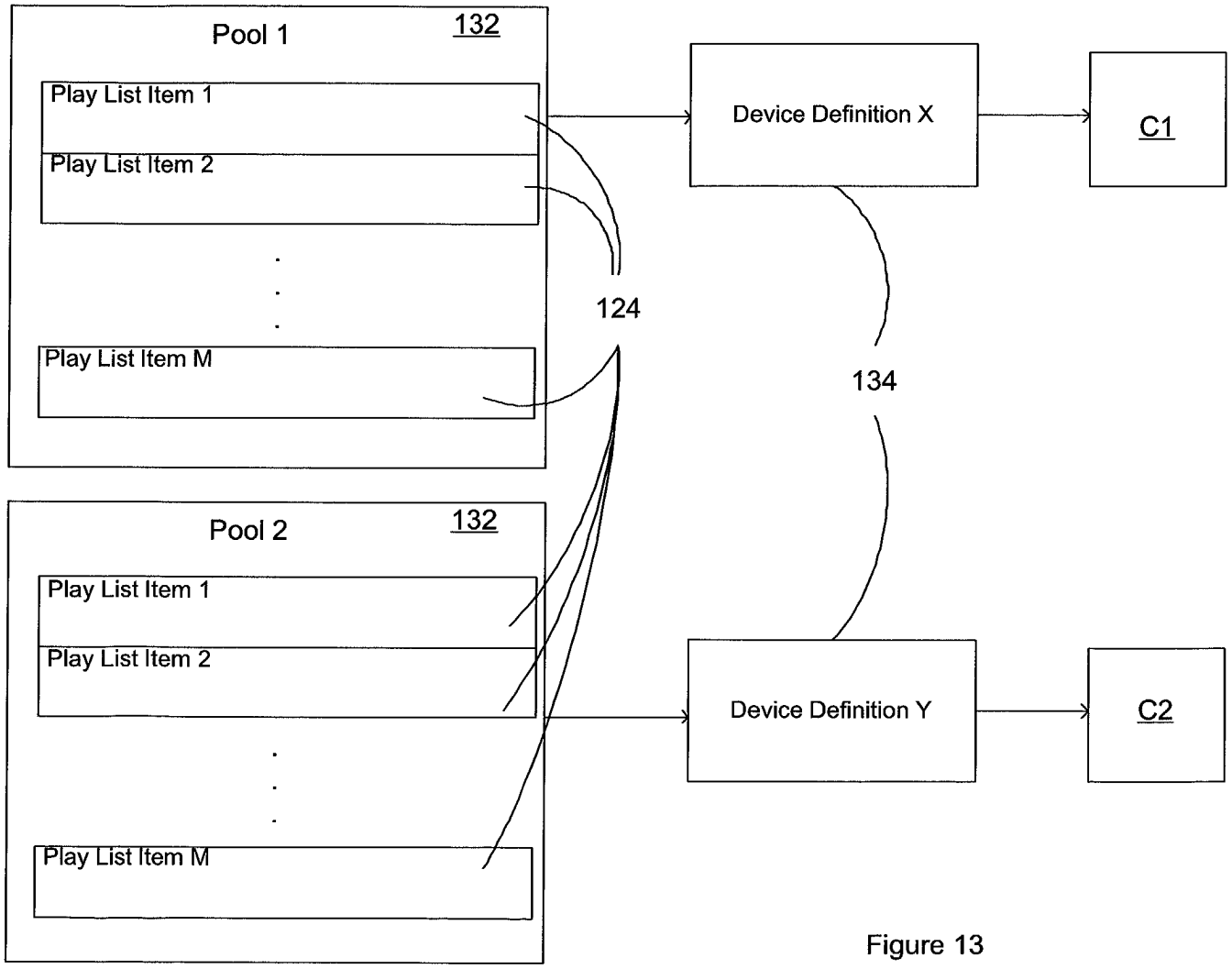
Pool 1
132
Play List Item 1
Play List Item 2
Play List Item M
124
Device Definition X
C1
134
Pool 2
132
Play List Item 1
Play List Item 2
Play List Item M
Device Definition Y
C2

Figure 13

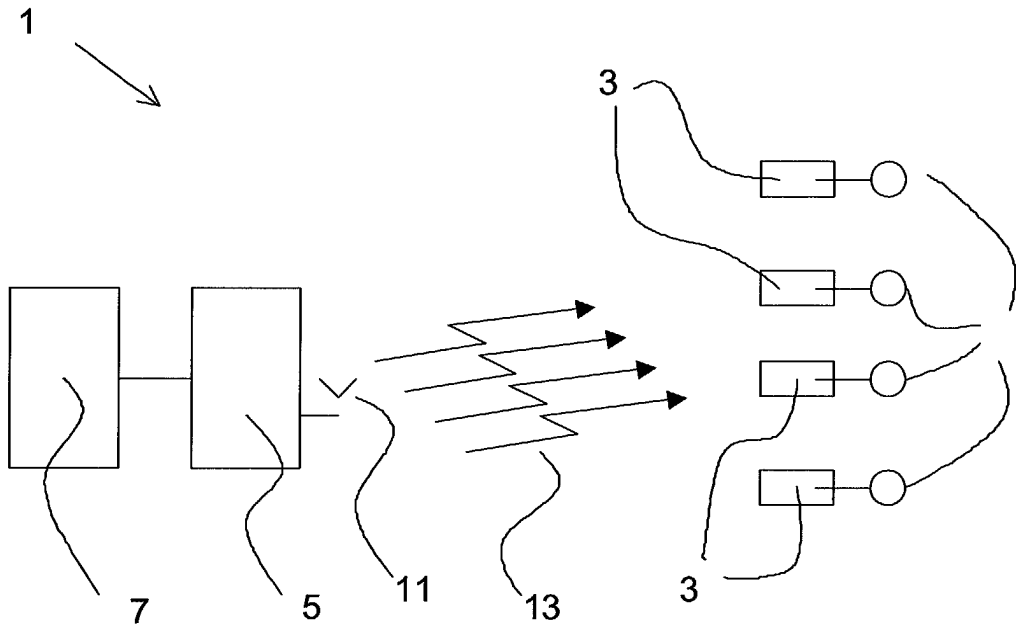

Figure 14

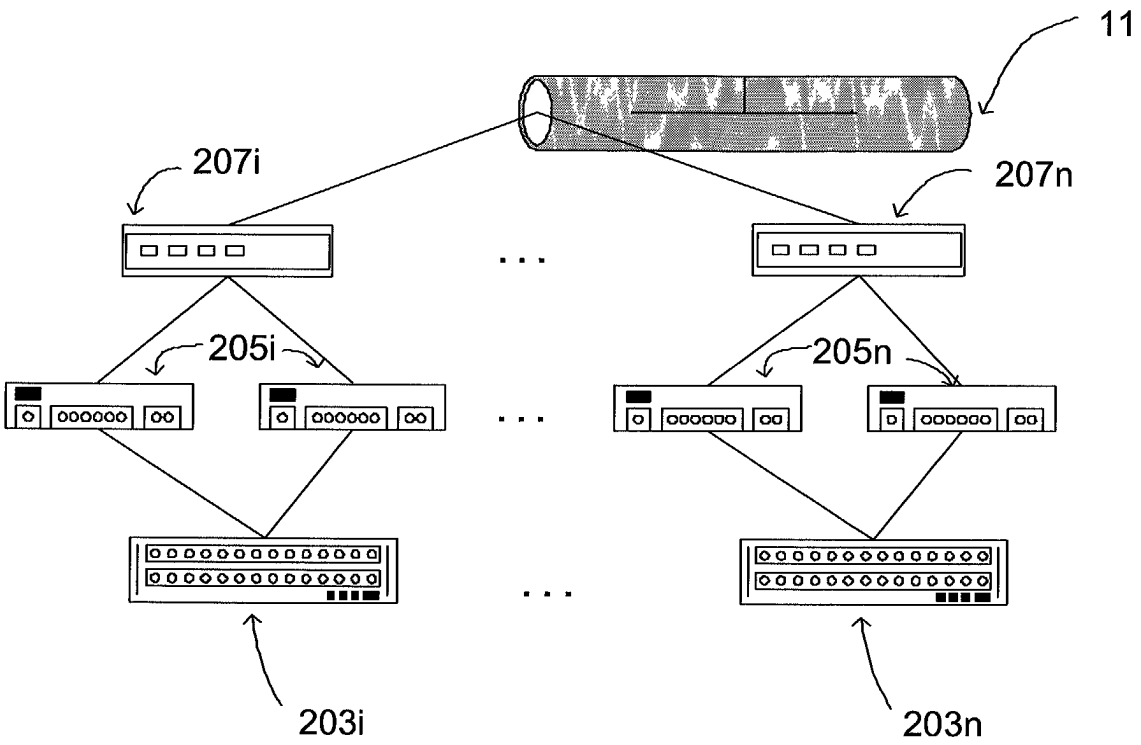

Figure 15

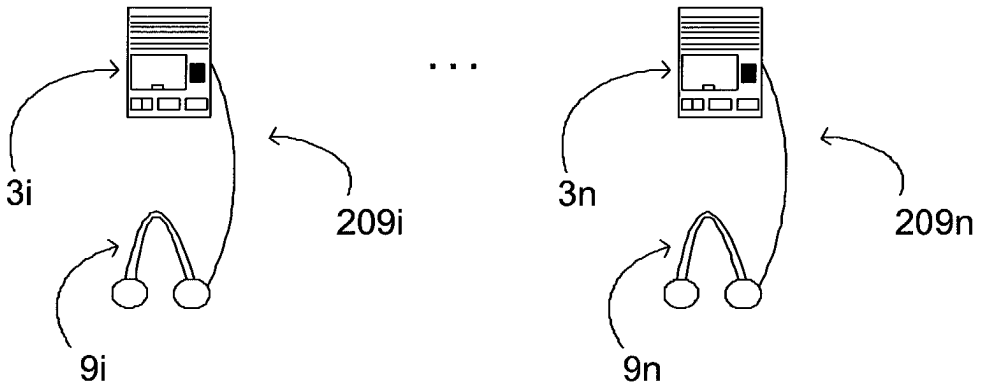

Figure 16

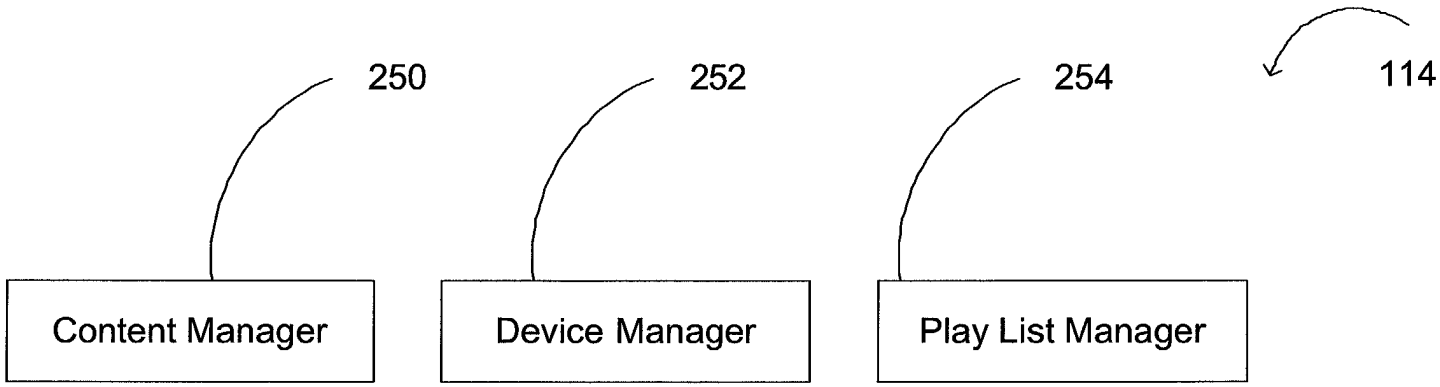
250
252
254
114
Content Manager
Device Manager
Play List Manager

Figure 17

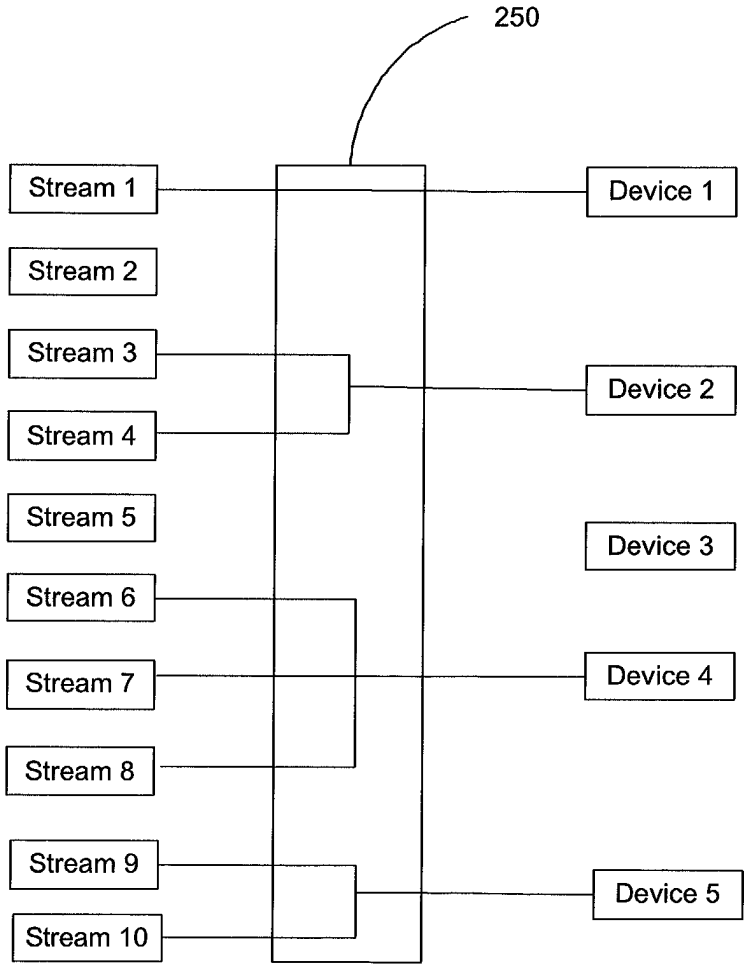
250
Stream 1
Stream 2
Stream 3
Stream 4
Stream 5
Stream 6
Stream 7
Stream 8
Stream 9
Stream 10
Device 1
Device 2
Device 3
Device 4
Device 5

Figure 18

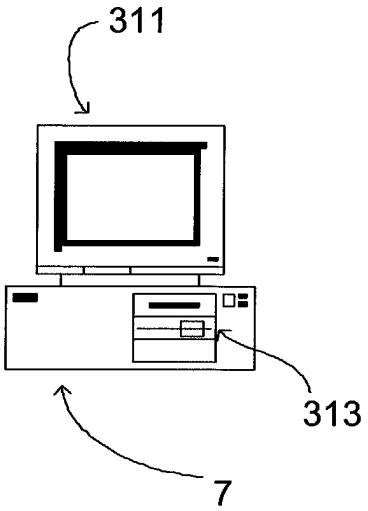

Figure 19

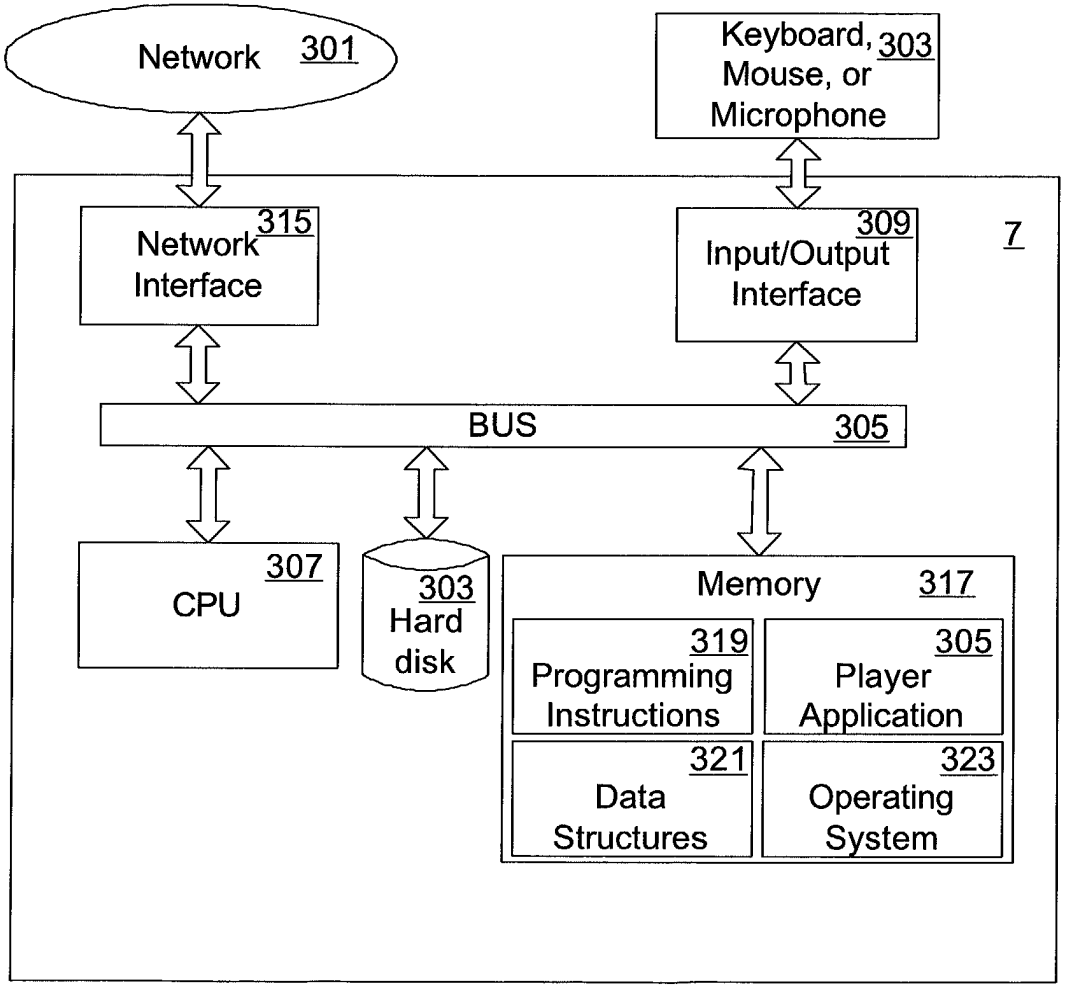
Network 301
Keyboard, Mouse, or Microphone 303
Network Interface 315
Input/Output Interface 309
7
BUS 305
CPU 307
Hard disk 303
Memory 317
Programming Instructions 319
Player Application 305
Data Structures 321
Operating System 323

Figure 20

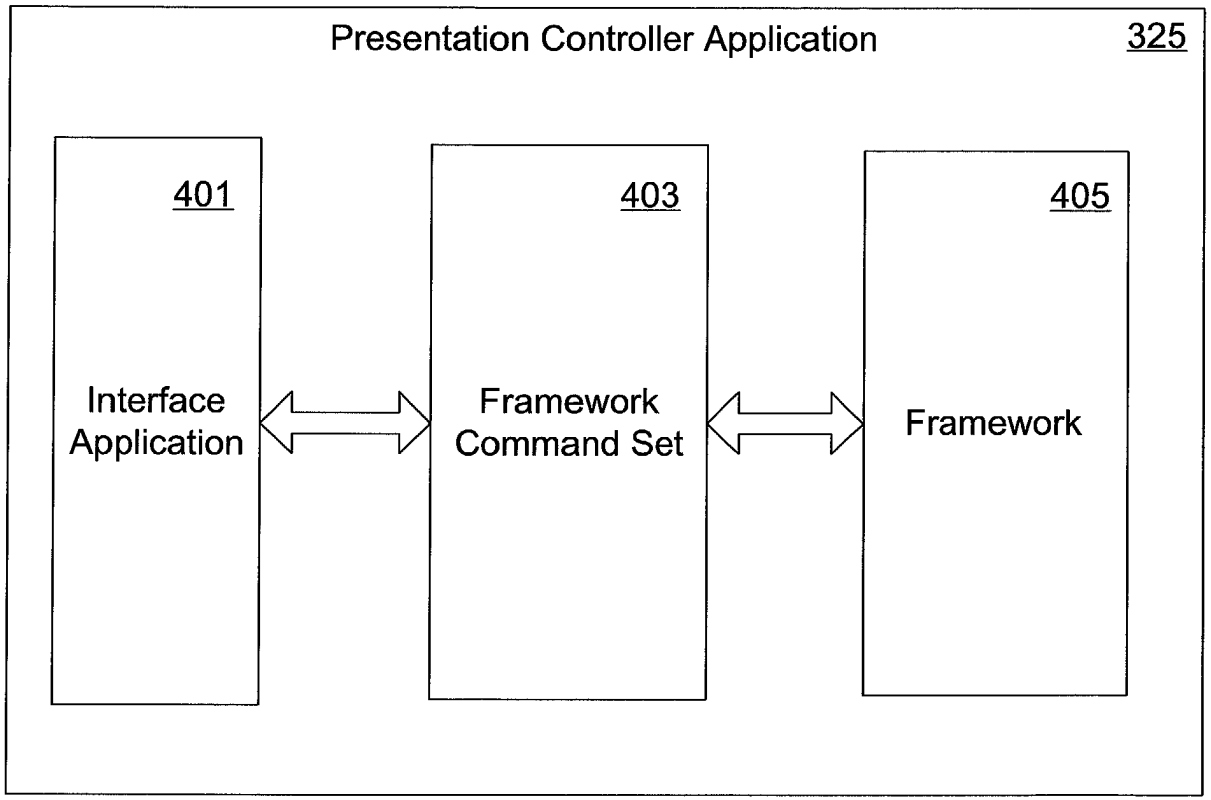
Presentation Controller Application
325
401
Interface Application
403
Framework Command Set
405
Framework

Figure 21

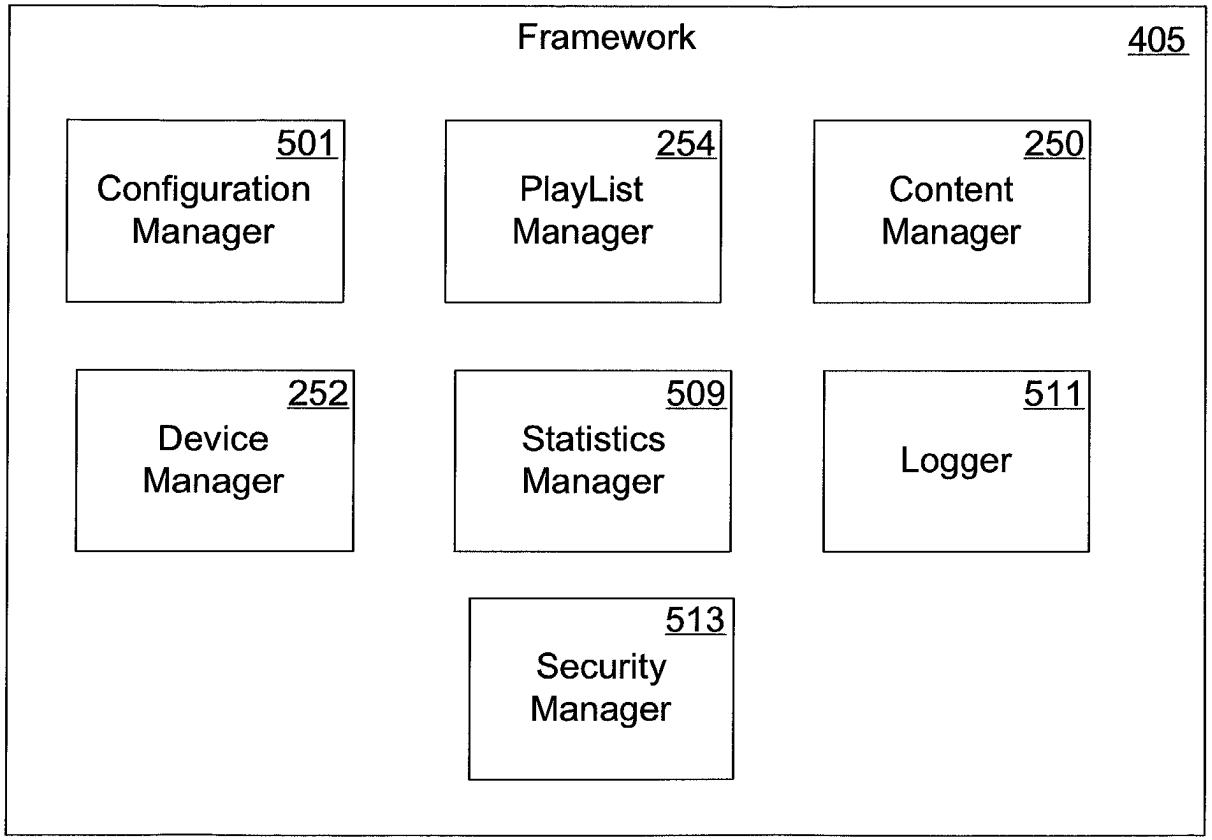
Framework
405
501
Configuration Manager
254
PlayList Manager
250
Content Manager
252
Device Manager
509
Statistics Manager
511
Logger
513
Security Manager

Figure 22

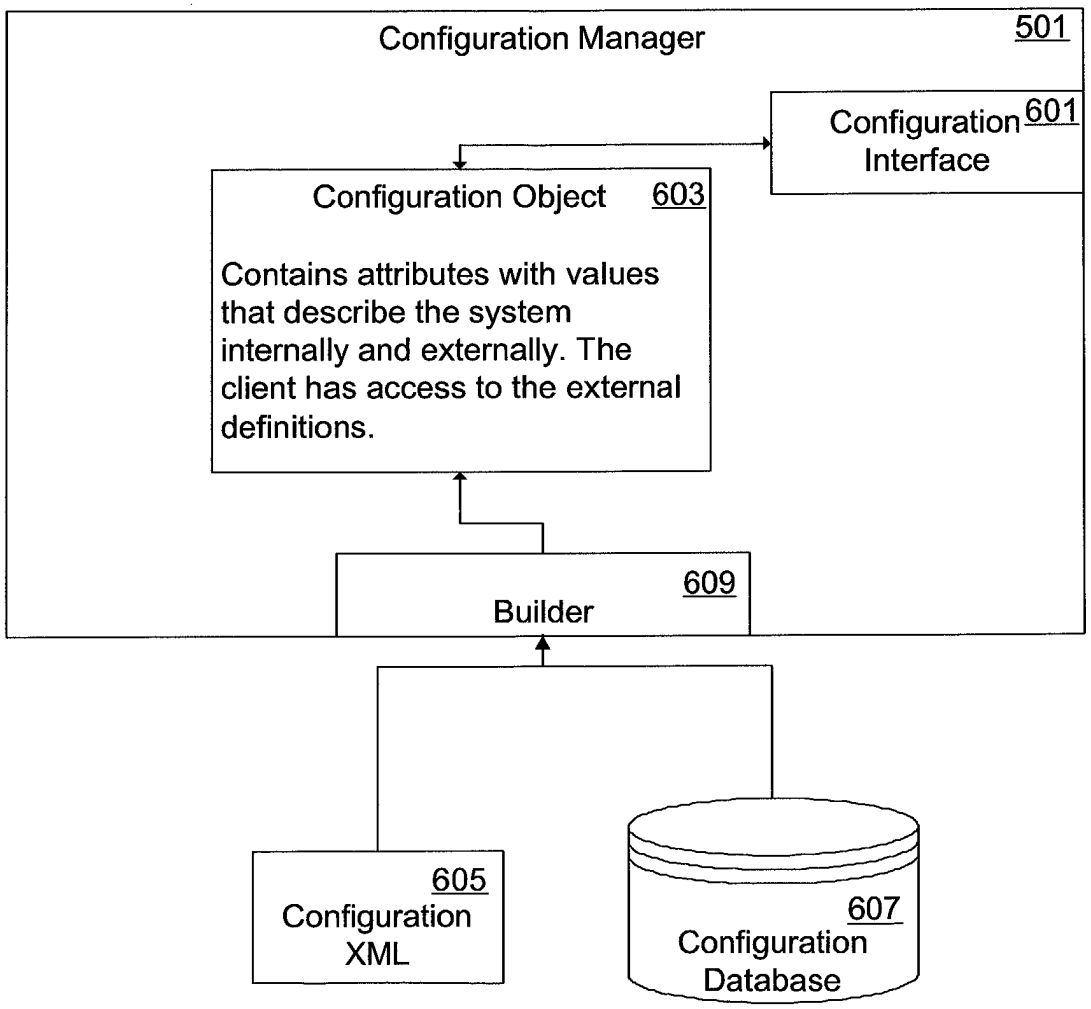
Configuration Manager
501
Configuration Interface
601
Configuration Object
603
Contains attributes with values that describe the system internally and externally. The client has access to the external definitions.
Builder
609
Configuration XML
605
Configuration Database
607

Figure 23

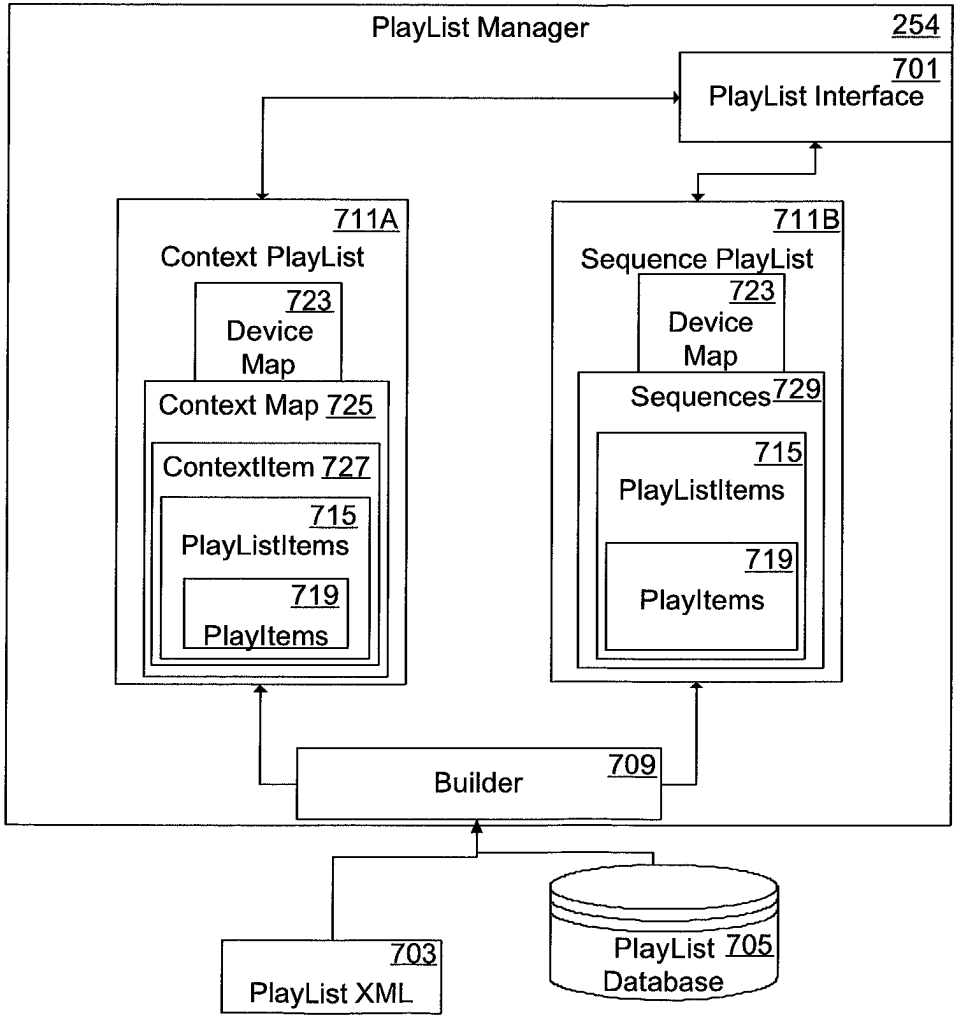
PlayList Manager
254
701
PlayList Interface
711A
Context PlayList
723
Device Map
Context Map 725
ContextItem 727
715
PlayListItems
719
PlayItems
711B
Sequence PlayList
723
Device Map
Sequences 729
715
PlayListItems
719
PlayItems
Builder
709
703
PlayList XML
PlayList 705
Database

Figure 24

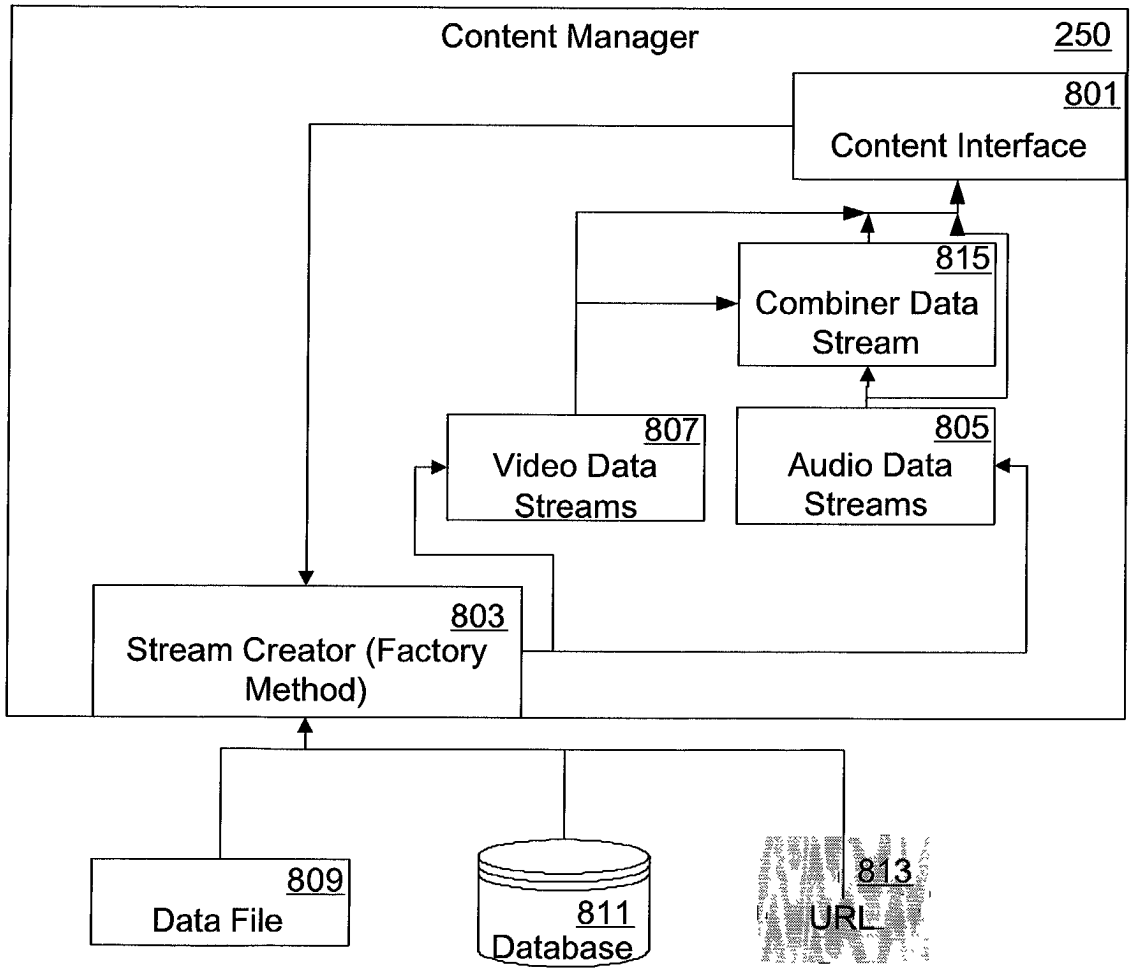
Content Manager
250
801
Content Interface
815
Combiner Data Stream
807
Video Data Streams
805
Audio Data Streams
803
Stream Creator (Factory Method)
809
Data File
811
Database
813
URL

Figure 25

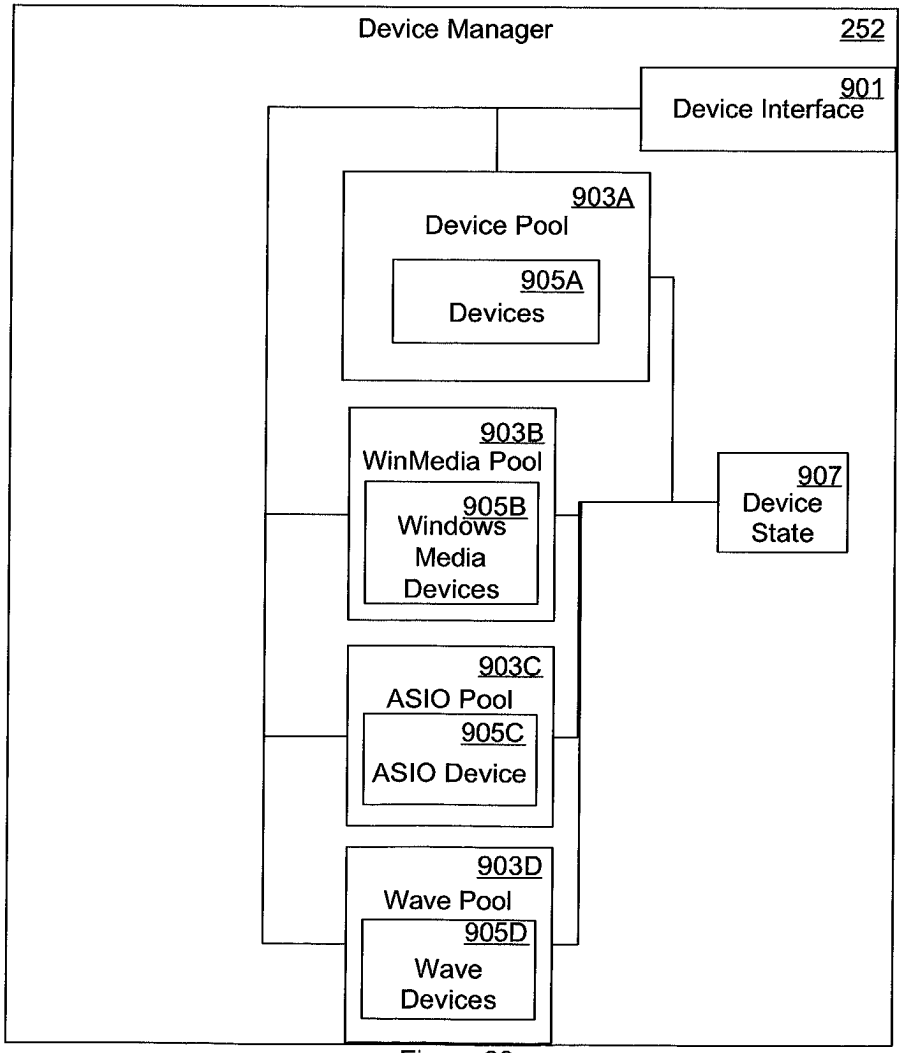
Device Manager
252
901
Device Interface
903A
Device Pool
905A
Devices
903B
WinMedia Pool
905B
Windows Media Devices
907
Device State
903C
ASIO Pool
905C
ASIO Device
903D
Wave Pool
905D
Wave Devices

Figure 26

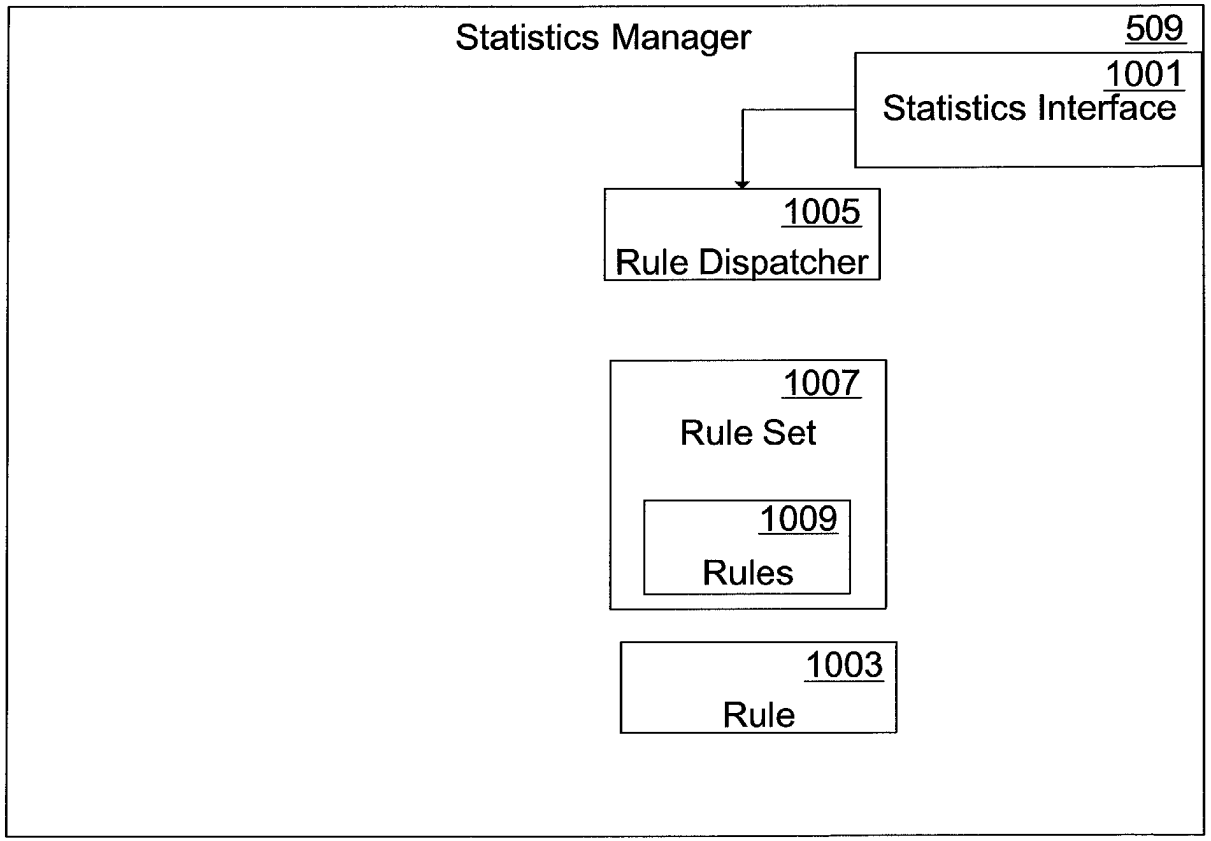
Statistics Manager
509
1001
Statistics Interface
1005
Rule Dispatcher
1007
Rule Set
1009
Rules
1003
Rule

Figure 27

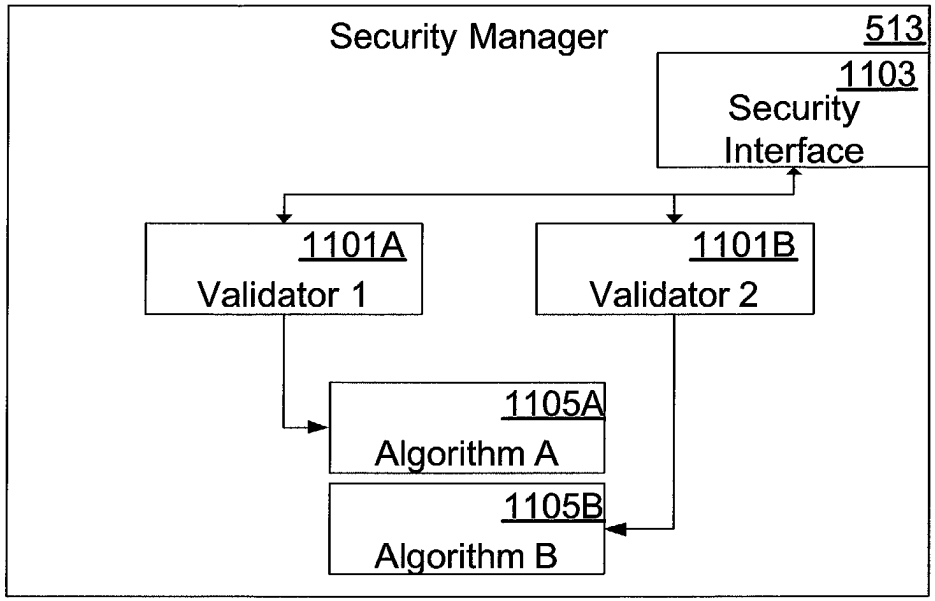
Security Manager
513
1103
Security Interface
1101A
Validator 1
1101B
Validator 2
1105A
Algorithm A
1105B
Algorithm B

Figure 28

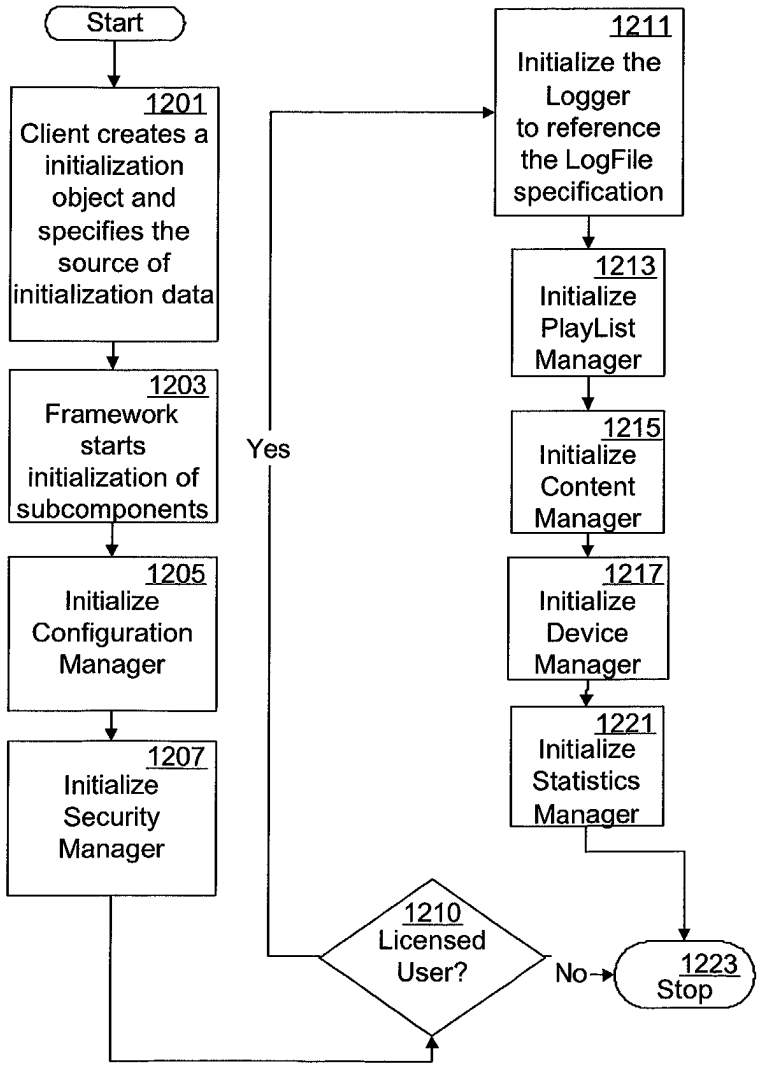
Start
1201
Client creates a initialization object and specifies the source of initialization data
1203
Framework starts initialization of subcomponents
1205
Initialize Configuration Manager
1207
Initialize Security Manager
1210
Licensed User?
Yes
No
1211
Initialize the Logger to reference the LogFile specification
1213
Initialize PlayList Manager
1215
Initialize Content Manager
1217
Initialize Device Manager
1221
Initialize Statistics Manager
1223
Stop

Figure 29

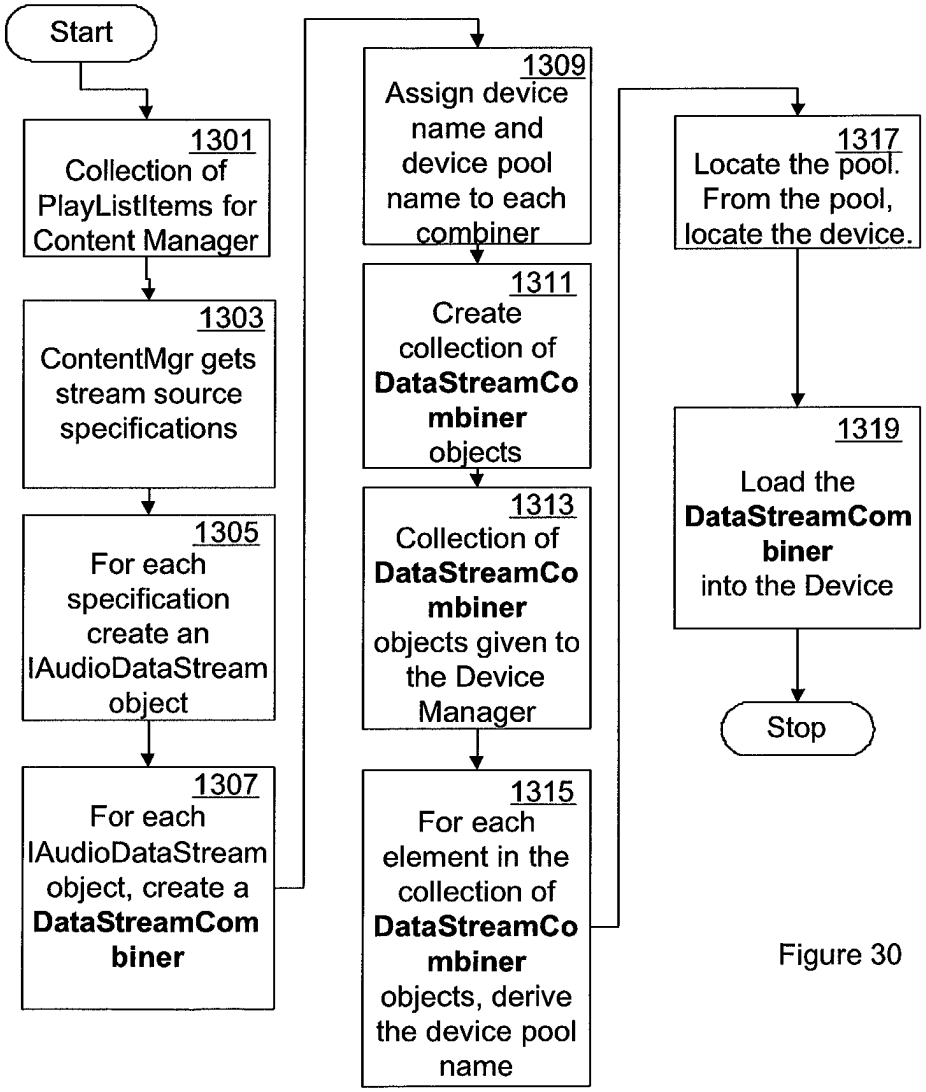
Start
1301
Collection of PlayListItems for Content Manager
1303
ContentMgr gets stream source specifications
1305
For each specification create an IAudioDataStream object
1307
For each IAudioDataStream object, create a DataStreamCombiner
1309
Assign device name and device pool name to each combiner
1311
Create collection of DataStreamCombiner objects
1313
Collection of DataStreamCombiner objects given to the Device Manager
1315
For each element in the collection of DataStreamCombiner objects, derive the device pool name
1317
Locate the pool. From the pool, locate the device.
1319
Load the DataStreamCombiner into the Device
Stop

Figure 30

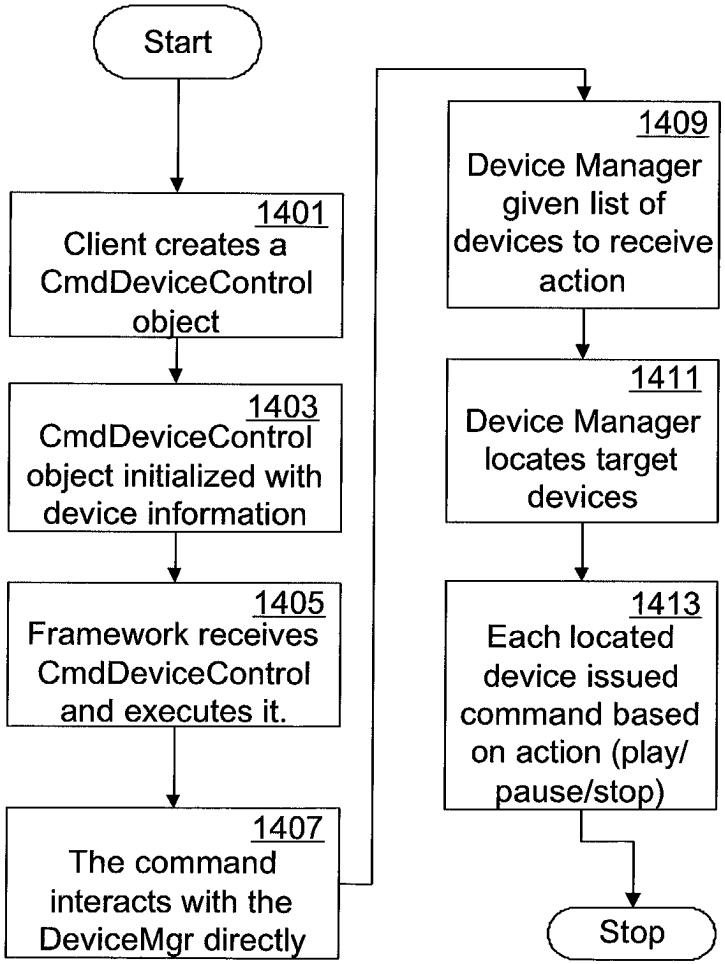
Start
1401
Client creates a CmdDeviceControl object
1403
CmdDeviceControl object initialized with device information
1405
Framework receives CmdDeviceControl and executes it.
1407
The command interacts with the DeviceMgr directly
1409
Device Manager given list of devices to receive action
1411
Device Manager locates target devices
1413
Each located device issued command based on action (play/ pause/stop)
Stop

Figure 31

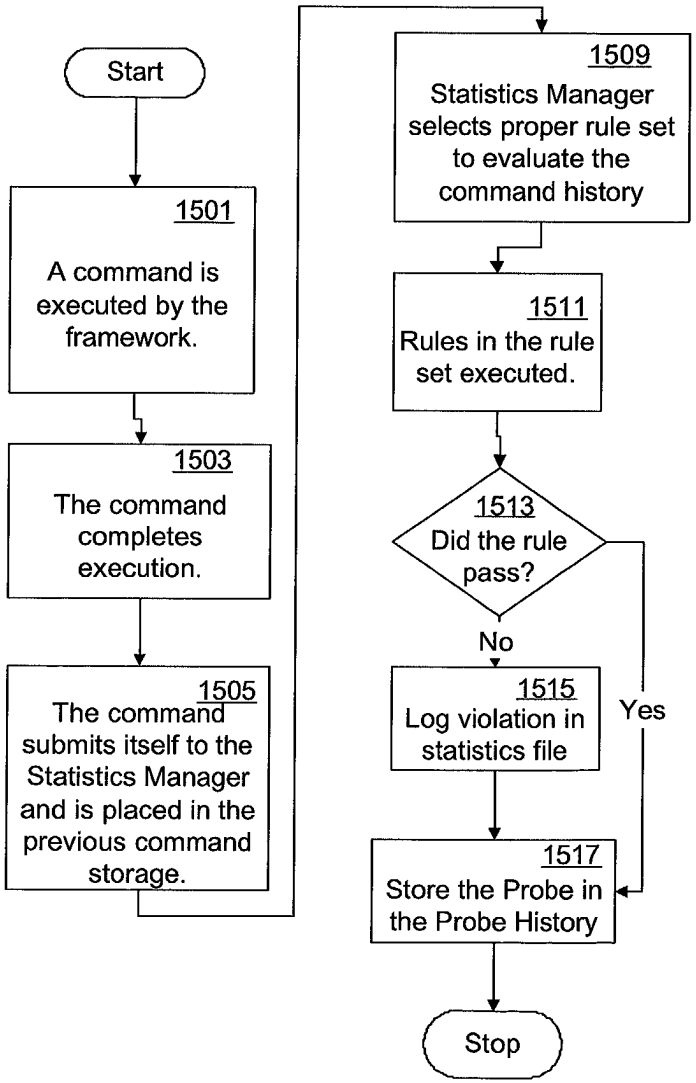
Start
1501
A command is executed by the framework.
1503
The command completes execution.
1505
The command submits itself to the Statistics Manager and is placed in the previous command storage.
1509
Statistics Manager selects proper rule set to evaluate the command history
1511
Rules in the rule set executed.
1513
Did the rule pass?
No
Yes
1515
Log violation in statistics file
1517
Store the Probe in the Probe History
Stop

Figure 32

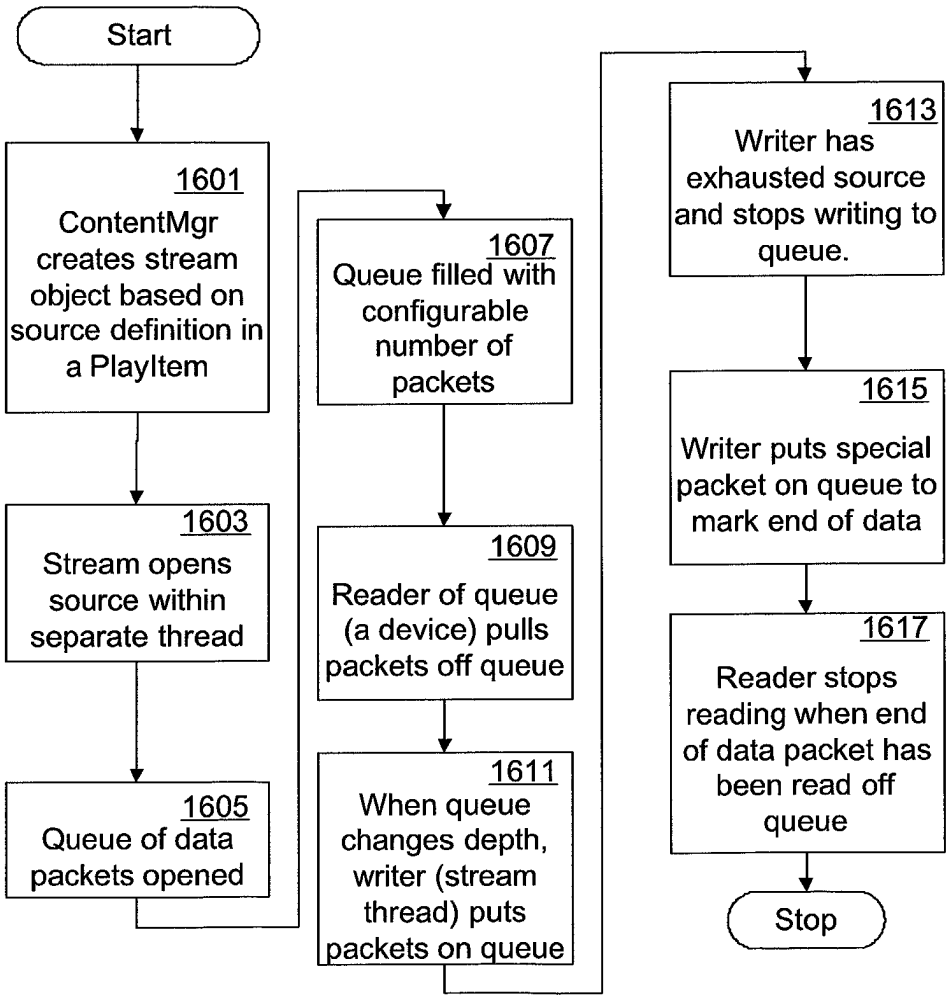
Start
1601
ContentMgr creates stream object based on source definition in a PlayItem
1603
Stream opens source within separate thread
1605
Queue of data packets opened
1607
Queue filled with configurable number of packets
1609
Reader of queue (a device) pulls packets off queue
1611
When queue changes depth, writer (stream thread) puts packets on queue
1613
Writer has exhausted source and stops writing to queue.
1615
Writer puts special packet on queue to mark end of data
1617
Reader stops reading when end of data packet has been read off queue
Stop

Figure 33

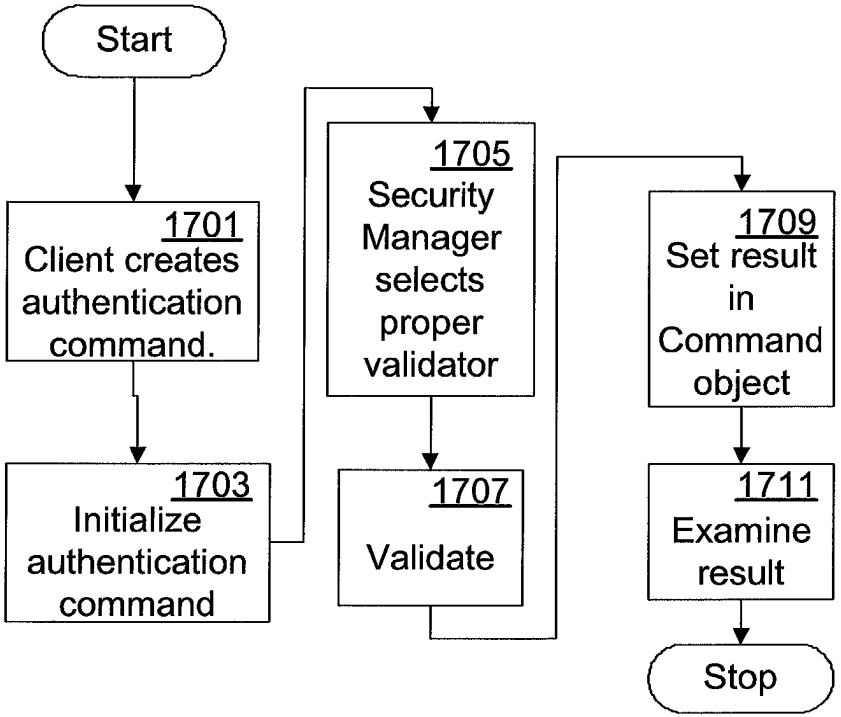
Start
1701
Client creates authentication command.
1703
Initialize authentication command
1705
Security Manager selects proper validator
1707
Validate
1709
Set result in Command object
1711
Examine result
Stop

Figure 34

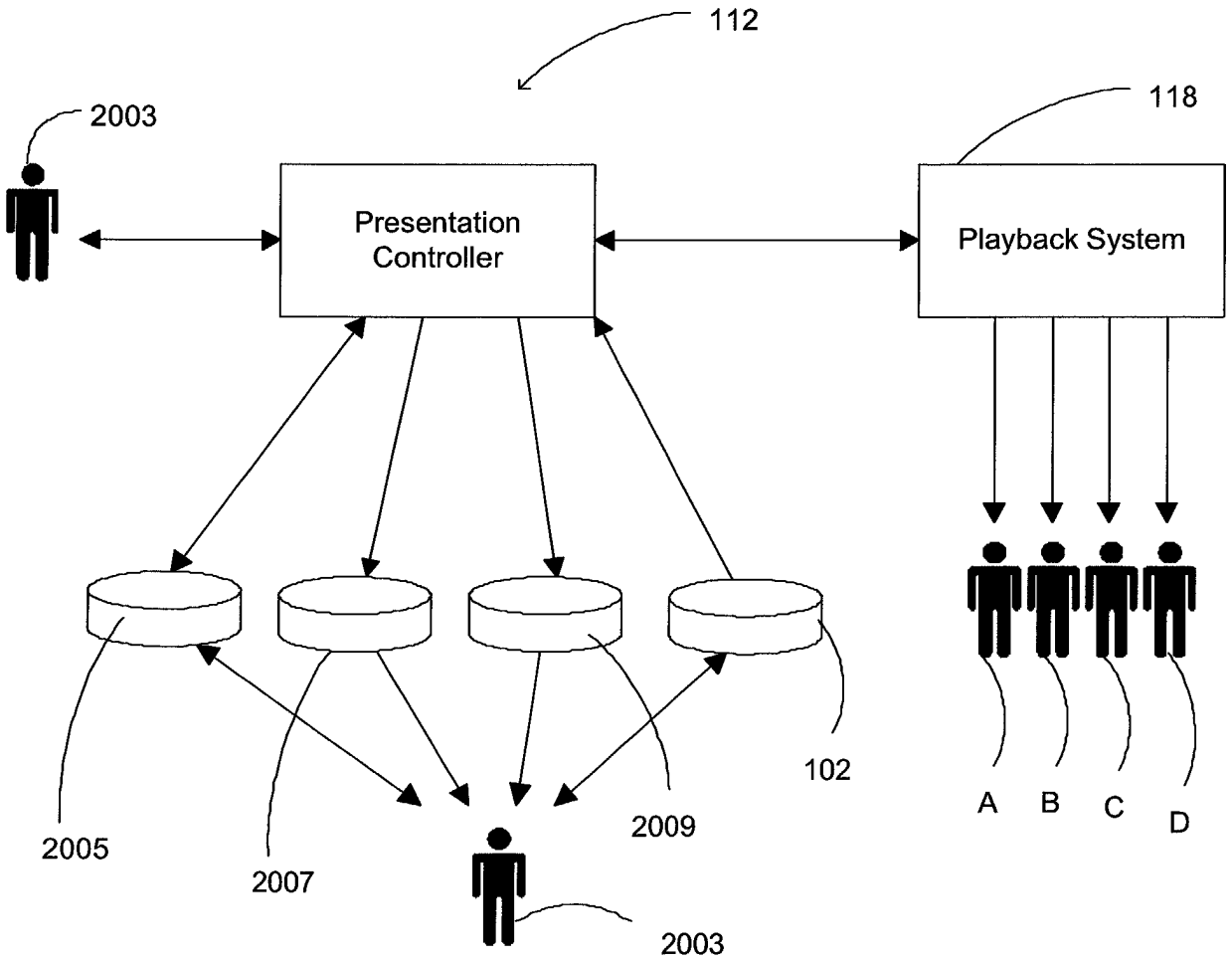
112
2003
118
Presentation Controller
Playback System
102
2005
2007
2009
2003
A
B
C
D

Figure 35

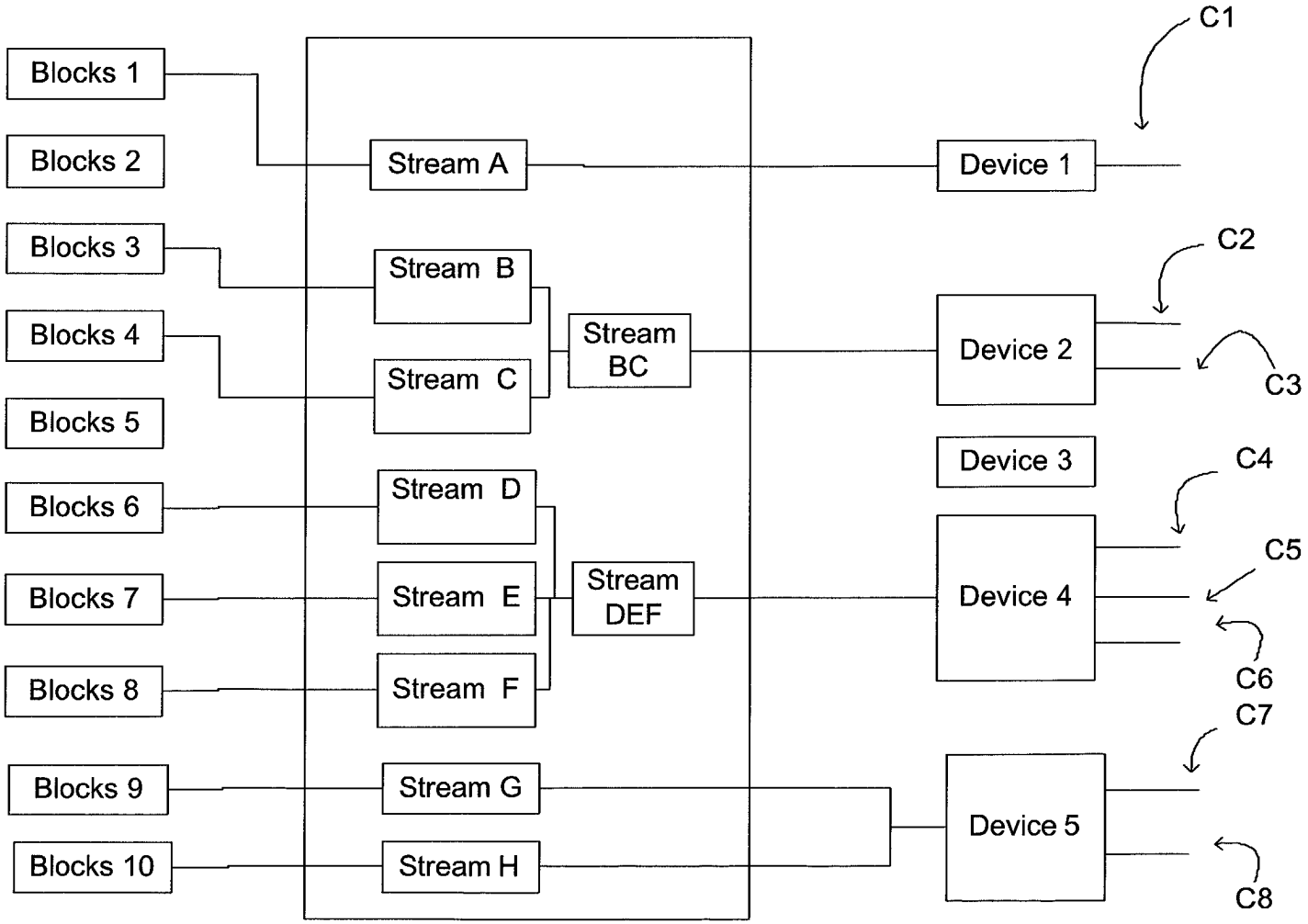
Blocks 1
Blocks 2
Blocks 3
Blocks 4
Blocks 5
Blocks 6
Blocks 7
Blocks 8
Blocks 9
Blocks 10
Stream A
Stream B
Stream C
Stream D
Stream E
Stream F
Stream G
Stream H
Stream BC
Stream DEF
Device 1
Device 2
Device 3
Device 4
Device 5
C1
C2
C3
C4
C5
C6
C7
C8

Figure 36

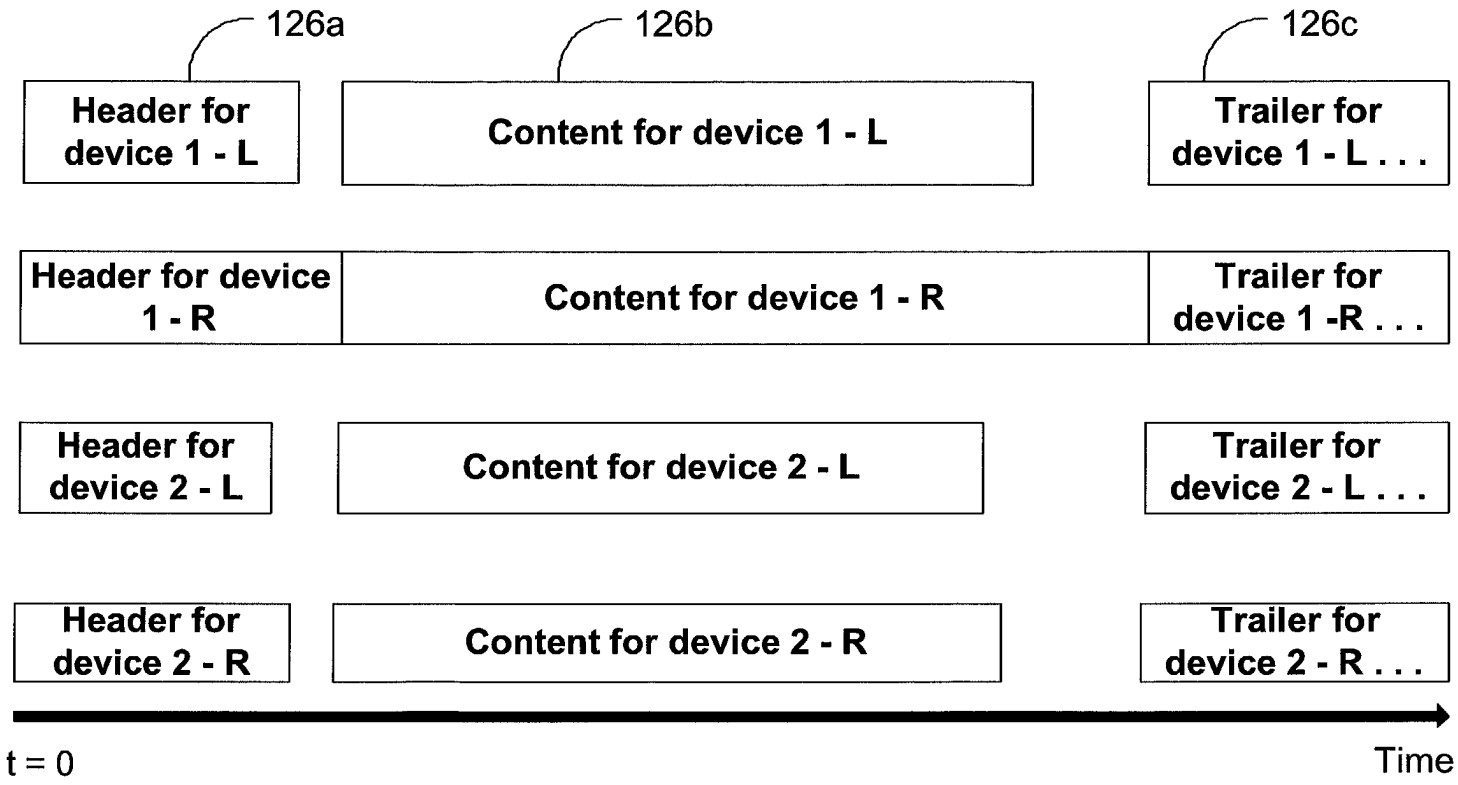
126a
126b
126c
Header for device 1 - L
Content for device 1 - L
Trailer for device 1 - L . . .
Header for device 1 - R
Content for device 1 - R
Trailer for device 1 -R . . .
Header for device 2 - L
Content for device 2 - L
Trailer for device 2 - L . . .
Header for device 2 - R
Content for device 2 - R
Trailer for device 2 - R . . .
t = 0
Time

Figure 37

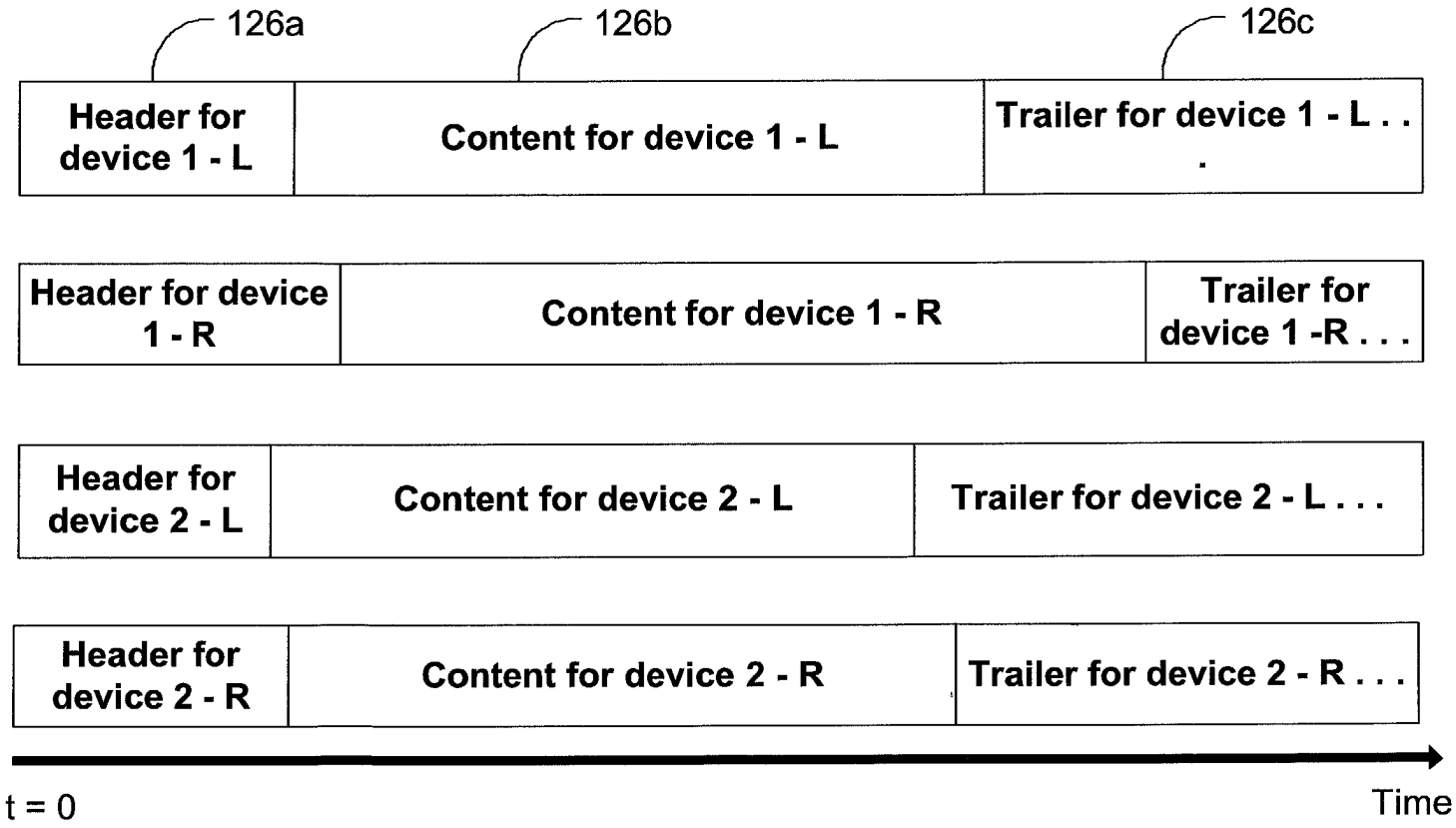
126a
126b
126c
Header for device 1 - L
Content for device 1 - L
Trailer for device 1 - L . . .
Header for device 1 - R
Content for device 1 - R
Trailer for device 1 -R . . .
Header for device 2 - L
Content for device 2 - L
Trailer for device 2 - L . . .
Header for device 2 - R
Content for device 2 - R
Trailer for device 2 - R . . .
t = 0
Time

Figure 38

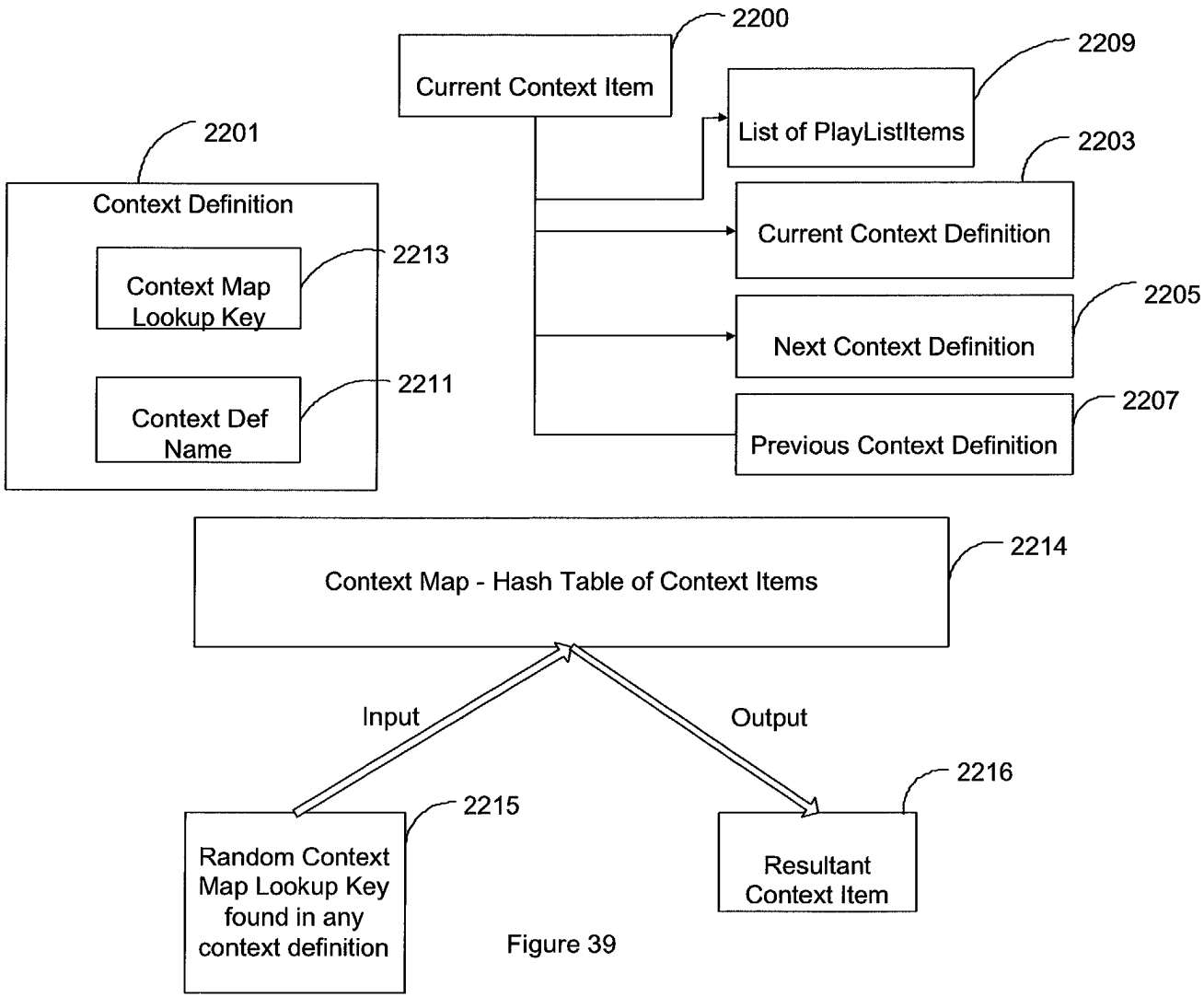
2200
Current Context Item
2209
List of PlayListItems
2201
Context Definition
2203
Current Context Definition
2213
Context Map Lookup Key
2205
Next Context Definition
2211
Context Def Name
2207
Previous Context Definition
2214
Context Map - Hash Table of Context Items
Input
Output
2216
2215
Random Context Map Lookup Key found in any context definition
Resultant Context Item

Figure 39